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The Manitoba Medical Review

Vol. 41 AUGUST - SEPTEMBER, 1961 No. 7

Orthopaedics

Upper and Lower Extremity Prostheses in Juvenile Amputees

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By definition a Juvenile Amputee is one in whom the major epiphysis, for example, the lower femur or upper tibia, are still open. In other words the Juvenile Amputee is not yet skeletally mature. On an average this will be about age fifteen but in some clinics, due to local situations, the Juvenile Amputee is continued on the program as such until age twenty-one. It really makes little practical difference except for statistical surveys or reviews.

The Juvenile Amputees are divided into three groups. The first — the true congenital amputee have complete loss of the extremity, distal to the level of the amputation, with smooth skin and no evidence of scarring, although there may be a dimpling or tiny vestiges of skin, of fingers or toes. The most common level of congenital amputation in the upper extremity is a short below elbow. The most common level of amputation in the lower extremity is a below knee. In this congenital group there is practically an even distribution between males and females.

The second group are those who have an acquired amputation due to trauma, infection, tumors and similar causes. In this group the level of amputation, of course, varies considerably, and the lower extremity is more often involved in the ratio of about four to three. In this group the boys far outnumber the girls, and this is accounted for by the boys being more active, running across railroad tracks, playing with gunpowder, guns, etc.

The third group are the ones that we have called conversion amputees. In this group the child is born with a congenital anomaly of either upper or lower extremity, but because of the difficulty in fitting this anomalous extremity with a prosthesis or for improvement in cosmesis the congenital anomaly is amputated at a suitable level. This group might well be considered a part of the congenital group, but the problems of prosthetic replacement are so much more complex that they are considered as a separate group.

Phantom pain or phantom limb has never been a factor in the true congenital amputee. In the acquired group, if the amputation has been done under age seven, we have no instances in our series of either phantom pain or phantom limb. If the amputation is done between the ages of seven to twelve the child may have some phantom pain or phantom limb, if this is brought to the child's attention or suggested to him, but even then this has not been a serious problem. Over age twelve at the time of amputation, the child may have either phantom pain, phantom limb or both, but here again, so far in our series, this has not been a major problem.

Bony overgrowth is not an uncommon happening, particularly in the acquired group of Juvenile Amputees. Until recently it was felt that bony overgrowth in the congenital group never occurred, but within the last year we have had two congenital amputations of the humerus that have shown bony overgrowth to such an extent that revision of the amputation was necessary, and the projecting bone was resected. In both of these cases the children had been wearing prostheses, and it may be possible that the prostheses irritated the end of the stump by becoming too short or too tight, and this factor might have accounted for the bony overgrowth. We have not seen bony overgrowth in the congenital amputee where there has been no prosthetic replacement. In the acquired group bony overgrowth is not uncommon particularly in the fibula, tibia and humerus in that order. The fact that the child has a bony overgrowth or might have is no contraindication to early prosthetic fitting and replacement. It is a rather simple procedure to revive the stump and the child can rapidly again use the prosthesis with few or no changes in the prosthetic fitting. Once the child has developed a bony overgrowth, with subsequent revision further revisions are more frequently necessary.

It is our feeling that prostheses should be supplied for the traumatic group as soon as practicable after amputation regardless of the level of the amputation and age of the patient. This is particularly true for the lower extremity. As a rule for traumatic amputation the prosthesis can and should be supplied no longer than three months after amputation. In those children who have had an amputation for malignant tumor the above indication would hold true, if funds were freely available to pay for the prosthesis. In our clinic we originally felt that no prosthetic replacement be supplied in less than one year because of the possibility of the appearance of metastases. However, we are changing our views on this and feel that the

child should have a replacement prosthesis if practicable within six months, providing at the time no pulmonary metastases are evident.

In the congenital amputee we again feel that prosthetic replacement should be supplied early. In the lower extremity our experience has shown that the child needs a prosthesis at about the time he would normally make an effort to stand. This of course will vary from six to fifteen months of age. This early fitting is necessary to help the child develop inherent balance, and we cannot expect the child to develop normal balance, if he has only one leg on which to stand. Therefore we recommend very definitely that the lower extremity amputee be fitted at this early age. For the below knee amputee this can be in the form of a conventional below knee type of prosthesis scaled down to size or the new patellar tendon bearing type of prosthesis. The above knee child amputee can be fitted with a conventional quadrilateral type socket with or without suction. The chief objection to giving a small child a suction socket type of prosthesis is that the parent would have to help the child get into the socket properly and that if during play he should lose his suction, and the prosthesis slipped off, the child or neighbors might not know how to put the prosthesis back on. If the child has a conventional socket with pelvic band he might not lose it as quickly, and have less difficulty. This is really a debatable problem because we have fitted above knee suction sockets as young as two years of age without any difficulty.

The SACH (Solid action cushion heel) Foot for children has proved quite satisfactory and at present is used almost exclusively. Child sizes of this foot are readily available commercially. As a general rule the Bock knee is neither indicated nor necessary for children's prostheses. It is too big mechanically and the child does not seem to require it for stability and knee control.

In the upper extremity it is also our feeling that the child should be fitted as early as possible. This means in the acquired type of amputee that replacement prostheses should be supplied within three to six months from the time of amputation. This is particularly true for children over three to four years of age. In the true congenital type a functional prosthesis can and should be supplied as soon as the child has shown sufficient normal development to demonstrate the need for such prosthetic replacement. In the below level we have fitted children as young as three months of age, so that they would grow up having extremities of equal length. At this age the terminal device is a plastic mitten. The baby uses this to aid in crawling, holding its bottle and even as a teething ring. As the child becomes older and develops more inherent mechanical ability the terminal device is changed to either a plastic covered hook or to the baby size aluminum hook. We have frequently fitted children from eighteen to twenty-four months of age with the voluntary opening hook and they have learned to use them quite well.

In the above elbow level of amputation we have fitted the child as young as eighteen to twenty-four months of age, knowing that they probably will not utilize the elbow lock and terminal device for about another year, since this takes considerably more mechanical ingenuity and the two to three year old child has not yet developed this mechanical co-ordination. However, they do become accustomed to the prosthesis, begin to depend upon it and oftentimes surprise us with the amount of function that they develop. The shoulder disarticulation level of amputation becomes a more difficult fitting and fabrication problem, and control function is decreased, but even at that we have fitted several young children.

Experimentally we have used the new 1 A child's hand. This in appearance is similar to the APRL hand but by mechanism it is a voluntary opening hand, like the voluntary opening hook. This size is primarily for the child from four to seven years of age. Mechanically it has not held up, and at the present time we are not recommending it except for research purposes.

Slides and diagrams were shown to demonstrate the various levels of amputation in children and the types of prostheses that have been supplied to them.

All of these children are given training in the use of their prostheses. If the child lives within a reasonable distance from the University the training is given an out-patient basis with the parents in attendance, so that they may know the goals of training and can do a considerable amount of follow up at home.

If the child lives a considerable distance away he is usually hospitalized for training, and before leaving the hospital the parents are instructed in the training program. It is of utmost importance that we have close liaison with the parents, otherwise the program might fail. We feel that the team approach is very justified. The team consists of the doctor, the prosthetist and the therapist, either occupational therapist or physical therapist. All working together with interested parents make for success of a Juvenile Amputee Program.

In summary, may we reiterate that in general the age of the child is no contraindication to prosthtetic replacement either in lower or upper extremities. The child should be fitted as early as practicable. He does need replacement of prostheses at frequent intervals due to normal growth. The juvenile amputee differs from the adult mainly due to further growth potential. Because of this growth potential prostheses must be lengthened or enlarged at frequent intervals and totally replaced at approximately each two to three years. Bony overgrowth and the possibility of bony overgrowth definitely is not a contraindication for prosthetic fitting.

The Hip Prosthesis

William E. Barker, M.D.

Introduction

This article will not deal with all aspects of the hip prothesis, but will concentrate on some interesting facets of the subject which may be of more general interest.

Prosthetic replacements of the hip joint fall into two major groups: the intra-corporeal and the extra-corporeal. The intra-corporeal hip prosthesis only will be considered — a device sugically implanted into the hip joint to replace bearing surfaces, as well as varying amounts of neighboring bone. This implant has direct contact with tissue fluid and cells.

The extra-corporeal group of hip prosthesis is mentioned for purposes of clarification only, and may be exemplified by the Canadian Prosthesis, which is used for replacement of a whole lower extremity as in cases of hip disarticulation.

It is certainly well appreciated that the modern hip prosthesis did not evolve from the work of medical men alone but was a team effort, the members of which included chemists, metallurgists, engineers and medical men.

It would appear that over the past three decades there have been three groups of prostheses, each group characterized by a basic structural design, and each occupying an era of popularity. The numerous variations of these basic structural designs will not be dealt with in this article.

The prosthesis representing each of the three mentioned groups are: the Smith-Petersen cup, the femoral head replacement with a cervical stem, and most recently the proximal femoral replacement replacing both head and neck of the femur and having an intramedullary stem for fixation. These prostheses or implants have undergone a transformation from their beginning to the present, from a device interposed between the articular surfaces of the hip joint to one which replaces the proximal end of the femur down to the intertrochanteric line.

The ultimate design of the hip joint prosthesis may be said to be a device which replaces both bearing surfaces with an artificial acetabulum as well as the proximal femur. This device has been used experimentally in animals, but to date rarely in man.

Historical Background

The modern arthroplastic reconstruction or reformation of a joint comparable in comfort, mobility and stability with the natural joint developed out of the early work of such men as Whitman, Brackett and Murphy. To cite an example, Murphy's method consists of using a fascial flap between the bearing surfaces of the hip joint. The problem remained of effecting a reliable barrier between the reconstructed joint surfaces in order to prevent fusion.

Smith-Petersen of Boston, in 1923 began experiments with molds of inert materials, the first being glass. The glass although inert, lacked mechanical strength. In 1933 pyrex was used, but this also proved inadequate. However, some molds stood up to full weight-bearing for as long as 25 months. In 1937 bakelite molds were experimented with, and one was used successfully for several years, but beyond this the writer has no available information. At this time Smith-Petersen's attention was directed by his dental surgeon to Dr. Venable's work on vitallium. The molds were made of vitallium but initially there was difficulty with the design. The first vitallium mold was inserted in June 1938, into the hip joints of a girl 19 years of age with ankylosis of both hips due to rheumatoid arthritis. A two-stage arthroplasty was first used and glass molds were inserted. The first stage entailed inserting a cup-shaped glass mold over a reconstructed head and into a reamed-out acetabulum. The barrier then allowed new bearing surfaces to develop, covered mainly by fibrocartilage. At the second stage the mold was removed leaving smooth bearing surfaces, and thus lessening the likelihood of ankylosis. The use of vitallium made the second stage unnecessary as it seemed to be an inert material and could be left in indefinitely. However, after this device had been tested against time, it was found not to be the complete solution, as many patients developed recurrence of symptoms after a few years. However, in the hands of Smith-Petersen himself some cups still remain implanted without recurrence of symptoms.

The idea of the design of the device which represented the second mentioned era, originated with Hey Groves (1926) and consisted of a prosthetic femoral head of ivory with a metallic cervical stem. The material in this prosthesis was not inert and this device was temporarily abandoned.

In 1950 the Judet Brothers in Paris presented a study of 300 cases in which they had used a prosthesis replacing the femoral head with an acrylic resin or methylpolymethacrylate, internally fixed by a cervical stem down the centre of the neck with the same material which was reinforced with a steel rod. This prosthesis remained popular for about five to ten years. Difficulties arose as a result of the design and materials used. The cervical stem did not provide the firm internal fixation to counteract the shearing forces to which the head was subjected. The stem tract became enlarged and the stem loose, and sclerotic changes developed in the acetabulum. The acrylic head became eroded and roughened, and in many cases there was a fracture of the prosthesis.

In 1940 Dr. Austin T. Moore of Columbia, South Carolina, in collaboration with Dr. Harold Bohlman of Baltimore, inserted the first vitallium implant to replace the upper portion of the femur. Thus began the development of the device which represents the modern era of hip prosthesis.

In 1950 with the assistance of the Professor of Engineering of the University of South Carolina and the Chief Engineer of the Ausenal Laboratories, an intramedullary type of prosthesis was developed. The design of this model changed many times and the approach through which it was inserted gradually migrated posteriorly, until finally the current procedure using the Moore Prosthesis is a highly successful one. The prosthesis is so designed that fenestrations present in the intramedullary stem permit bone to grow through as bridges, which thus lock the implant into place.

Materials for Prosthetic Implants

A material which is to be implanted in the body must:

1. be chemically inert,
2. not be physically modified by tissue fluids,
3. not excite inflammatory or foreign body cell response in tissues,
4. be non-carcinogenic,
5. not produce a state of allergic or hypersensitivity,
6. be capable of standing up to mechanical strains imposed upon it—as for example: friction in the joint,
7. be capable of being fabricated in the form required with reasonable ease and relatively low cost,
8. be capable of being sterilized.

Materials used for this prosthesis or implant consist of two broad groups:

(a) Metals: The Cobalt-chrome alloys, such as vitallium and stainless steels have proven most satisfactory.

(b) Plastic Synthetic Organic Materials: Many plastics have been developed for this purpose. However, as the metals have proven to be more satisfactory and are now used almost exclusively in the manufacture of hip prostheses, further discussion of plastics will not be continued. It may be mentioned that the reason for failure in the use of plastics was both mechanical and chemical. The material in a good many cases could not tolerate the stress to which it was subjected, and also its inertness was not as complete as one would desire.

The rationale of the inertness of metals will be dealt with briefly. The ground work on this subject was established by the experimental work of Venable and Stuck of San Antonio, Texas, and in 1937 they reported their study of the effects on bone, of metals based on electrolysis, using metallic screws of varying compositions implanted into the radius of dogs. If a piece of metal is placed in an electrolyte, ions pass from the metal into the fluid. If this process continues, corrosion of the metal will result. If the metal is covered by a thin layer of oxide which is not soluble in the surrounding fluid, the metal will be protected. Any metal placed in a liquid takes up some potential difference. There is a potential difference between two different metals in a fluid. Venable and Stuck came to the conclusion that the behaviour of metals was in accordance with the laws of the electromotive force of metals. Those metals most widely separated in the E.M.F. series create the greatest potentials in the electrolyte. Conversely, it may be said that those metals which closely approximate one another in the E.M.F. series create the least potential and hence the least corrosion.

Clarke and Hickman (1951, 1953) did further investigations along this line and noted that inert metals such as tantalum and platinum have high positive potentials while those that corrode readily —such as iron and magnesium have large negative values. Pure metals are inert, but in order to qualify in mechanical strength and inertness necessary for hip prosthesis, various metallic elements were mixed to form alloys. Vitallium composed of cobalt 65%, chromium 30%, and molybdenum 3%, satisfied these qualifications. Stainless steel with an iron and carbon base became corrosion resistant, when various metallic elements and combinations thereof — such as chromium, nickel and molybdenum — were added. An example of steel more commonly used contains chromium 18%, nickel 8% to 10%, and molybdenum 2% to 4%.

Indications for the Use of a Hip Prosthesis

It may be said that in general a hip prosthesis is indicated only when the patient is of the physiological age between 65 years to 70 years or over. There are, however, exceptions to this rule. Examples of these exceptions are: (a) bilateral ankylosis of the hips, secondary to rheumatoid arthritis and (b) destruction of the femoral head and neck by a new growth. The reason for confining its use to such an age group is that it is not yet known how long the current prothesis will endure. However, some orthopaedic surgeons are using this device at a much younger age than is previously indicated.

The specific indications are:

1. Subcapital fracture or high cervical, in which cases it is known that the incidence of avascular necrosis may be as high as 50%.
2. Established avascular necrosis of the femoral head.
3. Fractures neck of femur with non-union.
4. Advanced osteoarthritis of the hip joint.
5. In non-specific infective hip disorders — such as rheumatoid arthritis and Marie-Strûmpell's arthritis.
6. Septic arthritis with changes many years later.
7. In the destruction of the femoral head by tumor, benign or malignant.

Finally, one may emphasize the great value of this prosthesis to patients with hip fracture who are unable to use crutches because of other disability due to hemiplegia or Parkinsonism.

Bodily Response to Implant

The efforts over the past three decades have been directed chiefly towards the development of prostheses with the most durable structural design, and

consisting of materials of maximum mechanical strength as well as inertness. At present it cannot be said that this has been achieved.

The response of the body to the implant is chemical as well as biomechanical. The implant material is responsible for the chemical response and the implant design for the biomechanical. The chemical response is dependent upon: (a) the rate of corrosion and quantity of the corrosion products present, and (b) the toxicity of these products. The argument as to whether tissue changes are caused by an electric current or by the toxic effect of the metallic salts still continues. The latter is favoured. The effects upon tissues are two, namely: inflammatory response and a fibrotic reaction. These reactions are usually mixed; the more corrosion the greater the inflammatory response, and the more inert the transplant the less the inflammation, but there is usually a fibrotic response. The modern hip prosthesis provokes a very mild inflammatory response with no white cells or giant cells. A thin fibrous capsule is formed lined with synovial-like cells, covering the implant in all regions where the surface is exposed. The implant which is made of vitallium demonstrates no pitting. The biomechanical effect of the intramedullary type prosthesis is in the form of some bony sclerosis at the points of maximum stress, where the base of the neck is seated at the intertrochanteric region. The point of maximum stress is usually medially over the calcar femorale. There may be evidence of the stem being loose in the medullary canal which is demonstrated radiologically by a space around the stem. This is the result of mechanical forces rather than chemical.

Summary and Conclusion

(1) A brief discussion has been presented on hip prosthesis with no attempt to cover the topic as a whole, but with emphasis on those facets of the subject which would seem of a more general interest.

(2) Development and implant materials have been stressed.

(3) Three basic designs of the hip prosthesis are mentioned.

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. . . "A proper layout of data requires both considerable knowledge and utter honesty, hence the oft-repeated and sound observation that statistics are no better than their source. One must be quite sure whether the object of study is the variability among all categories or the distinction between two classes; whether the proposed line of attack deals with absolute classes or only with some level of arbitrarily chosen measurement such as titer, intensity, cell count, and so on. Once a source is adopted, it also is necessary to adhere to the requirements and not shift and shuffle in the hope of gaining a point. One fairly frequent practice of this kind is the reporting of a few comparisons, the only significant ones out of many comparisons attempted. These 'significant' comparisons are apt to involve either few or else many in both classes, because it is from the very small cross-classifications that the greatest **relative** deviation from chance is bound to emerge. In view of the many clinical trials in which even the highest returns involve less than one-third of the group, this factor of numerical relativity is very important . . .

"There is a particular kind of common sense that goes with any method, and if the common sense is ignored the results are not truly informative. Correlation is a definite alignment between two distributions and cannot be deduced from the variability of three or more such distributions. By the same token, variability among several distributions is in no way elucidated by correlating a pair of them. If one method, such as chi-square, is to continue as a popular, easily computed substitute for more precise methods, its peculiarities and limitations ought to be discussed thoroughly."

Dr. Norman G. Hawkins, "A Note on Statistical Usage," J.A.M.A., Jan. 21, 1961.

Surgery

Prosthetics in Cardiac Surgery

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In cardiac surgery as in other areas of the body one is, on occasion, confronted by anatomical and physiological deficiencies of such a nature that artificial media must be temporarily or permanently introduced to effect a successful outcome. In its broader interpretation these media may include (a) a system of cardiac by-pass, (b) materials to bridge septal defects, (c) materials to narrow or enlarge channels of flow, (d) valve prostheses, (e) use of cardiac pacemakers, (f) total heart replacement (experimental).

A

The concept of an artificial heart-lung machine is not recently conceived. Pioneering efforts of Gibbon, Dennis and Bjork undoubtedly provided the essential background and stimulus to bring this to reality. It would appear that at present the majority of pump oxygenators consist of a combination of one of two types of pumps coupled to one of three types of oxygenator. Pumps most frequently employed are either of the DeBakey (roller non-occlusive) or the Sigmamotor (finger occlusive) type. The relative merits of these pumps are beyond the scope of this presentation; however, there is ample clinical proof that either one may function satisfactorily and provide adequate perfusion delivery without significant disturbance to the blood or the patient.

The oxygenators which are coupled to these pumps are likewise variable. One may employ the screen (Gibbon) type, where the blood is filmed over a stationary fine mesh stainless steel screen in an atmosphere of oxygen. A variant of this principle is utilized in the rotating disc (Bjork) type, where the blood is filmed on a series of thin, revolving discs in a chamber filled with oxygen. The third method consists of gently bubbling oxygen (DeWall, Gollan) directly through a moving column of blood, the foam created is then debubbled by antifoam substances and a helical shaped settling reservoir. On the basis of extensive clinical application of all these heart-lung machines, one finds that their successful use is more dependent on the care and understanding with which they are managed, than on their particular component-combinations.

Although the function of the heart and lungs can be artificially supplanted with relative safety for periods well over an hour, it would be superfluous to say that the ideal pump-oxygenator has yet to be invented. There is abundant clinical evidence to show that the more prolonged the perfusion in patients (where other things are not equal) as well as animals (where they may be), the higher the overall mortality. Problems, such as unexplained bleeding, progressive acidosis and post-operative renal difficulty may be seen with increased frequency in those instances where the by-pass exceeds one and one half hours.

B

Following the early experience in the repair of atrial septal defects of the secundum type under hypothermia (Lewis, Swan et al), the erroneous impression was gained that direct suture might be adequate for the approximation of all septal defects. Ventricular defects soon shattered this concept. It was apparent that placing sutures in the muscular portion of the ventricular septum, under even slight tension was fraught with a high incidence of defect recurrence. This was particularly prone to occur when the surgeon was obliged to carry out a brief period of cardiac massage. Various techniques were evolved to eliminate suture tension, and the one that has gained widest acceptance consists of the utilization of a patch of prosthetic material to bridge the defect. Lightly compressed polyvinyl formal sponge (Ivalon) seemed to suit this requirement well and is today widely used. Teflon woven in the form of a felt sheet, has also frequently been employed. After a variable period of time, both these materials may be incorporated into the septum by fibroblastic invasion and are apparently inert. More recently Kirklin has indicated that by careful, direct suture, many ventricular defects currently being patched can be closed without significant tension. In many instances the location of the defect and its particular type are crucial to this decision. For instance the closure of an atrio-ventricular canal type of defect will almost invariably require some prosthetic tailoring, if the ventricular component is to be permanently closed.

As mentioned, the vast majority of atrial defects are encompassed by direct suture. There is, however, an important minority where a prosthesis may be required. This is true in some cases of anomalous pulmonary venous drainage to the superior vena cava, where a partitioning of this channel by a prosthesis is at times necessary in order to redirect the pulmonary venous flow to the left auricle without obstructing the superior vena caval return. More rarely, one may encounter an unusually large secundum type defect, where a patch of Ivalon or Teflon would seem more suitable than suture under tension, the latter not being clearly evident in the empty, open heart. The cushioning of sutures by tying them over pledgets of Ivalon is an accepted safeguard with all intracardiac defects.

C

There are presently two clinical situations where the use of prosthetic materials are accepted in

order to narrow or enlarge channels of flow. As initially suggested by Dammann, the banding of the pulmonary artery in infants with large left to right shunts at the ventricular level, has gained some popularity as an interim operation to alleviate the congestion and almost intractable failure which some of these cases present. A material used is a strip of Dacron, approximately 8 mms wide with a Helanca weave. Many dramatic results have been reported, in which failure cleared, growth increased along with a marked reduction in the instances of pulmonary infection which are so common in small patients. The added dividend of protecting the pulmonary vasculature against the development of intimal and medial atherosclerotic changes associated with pulmonary hypertension, would seem to be most desirable.

Other opinions regarding the banding operation should be mentioned. Clearly this operation is only of temporary benefit, for when the patient is larger the corrective intracardiac operation is still necessary. The additional difficulties resulting from the first procedure may significantly increase the morbidity and mortality of the second operation. Moreover, the exact degree of narrowing which must be produced at the first operation is a delicate matter—for if one errs on producing too great a reduction in the cross-sectional area of the pulmonary artery, intractable right heart failure may be a disastrous sequel. Conversely, too little constriction, may prove ineffectual in offering the desired protection to the pulmonary vessels.

The major clinical situation which may require a prosthesis to widen a channel of flow is encountered in the total correction of Fallot's tetralogy. Here, despite generous resection of the hypertrophied crista supraventricularis and adjoining muscle of the right ventricular outflow tract, the surgeon may be left with a channel whose over-all size is felt to be inadequate to carry the right ventricular output, once the associated septal defect is repaired. It would seem appropriate to enlarge this channel and the proximal undivided pulmonary artery with some prosthetic material appropriately called an "out-flow patch." There is, as yet, no agreement on the type of material which is most suitable. Compressed Ivalon, fashioned in a dome shaped patch has been utilized fairly extensively. Others prefer a strip of woven Teflon taken from the commercially available aortic prosthetic graft. More recently some authors have utilized autogenous pericardium which on short-term follow-up, has not shrunken or resulted in significant aneurysmal formation. To date this problem is still under scrutiny with some surgeons avoiding an out-flow patch except where the situation is clearly insurmountable without it.

D

Early in the clinical application of open-heart surgery to acquired (rheumatic) heart disease it was predictable that a significant number of patients could not be benefitted unless some form of valve prosthesis were available. In those situations in which actual valve destruction and/or calcification were extensive, reconstructive valvuloplasty was inadequate.

The importance and intricacies of prosthetic valve design and replacement is attested to by the fact that in the United States alone by the end of 1960 no fewer than 51 research groups were working directly on prosthetic valves or related problems. Early in the development of valve prostheses it was found that little was known about their hemodynamic function, a factor which was crucial to their proper design. As a consequence a great deal of time and effort has gone into the design of pulse duplicators and in vivo (intracardiac) photography. Factors, such as gradient pressures, valve compliance, fatigue of prosthetic materials, etc. have been studied to provide a sound basis for the final design.

Polyurethane foam and polyurethane ester have shown considerable promise. The former is a polyether and is insoluble in organic solvents, while the latter is soluble in some organic solvents, such as tetrahydrofuran, resulting in a smooth durable plastic which resists fatigue. Interestingly, the smooth plastic shows a high incidence of thrombus deposition, while the foam type tends to remain free of excessive fibrin and thrombus. The deposition of fibrin is most prone to occur on mitral valve prostheses and less on aortic valve replacements. Other material, such as knitted Teflon, show a high incidence of thrombus formation. Use of heparin and other anticoagulants have, as yet, shown little promise in the solution of this problem. Kolff suggested that the point of contact of the valve cusp with the myocardium is the site of origin of thrombus formation and the use of fibrinolysin therapy post-operatively, or a slow release anticoagulant which is incorporated into the polyurethane material (Barium heparin) gave more promising results with some inhibition of thrombus formation.

Morrow at the National Heart Institute has worked extensively with synthetic polymers, particularly Silcone rubber (Silastic) valve prostheses. This material resists fibrin and thrombin formation and can be easily molded in the laboratory as well as being readily bonded to other materials such as Ivalon with Silastic glue. He has shown that the surface electrical charge is important in fibrin formation. With endothelial damage a positive charge replaces the normal negative electron surface charge and thrombus deposition soon follows. Plastic compounds which are inert or negatively charged show promise in overcoming this major hazard. Commercial aortic valves are now available and have had successful application in the hands of many (Hufnagel, Kay, Bahnson, McGoon, Lillehei). Unfortunately there are as yet no long-term follow-up series of significant size. These valves are provided as individual cusps or matched

sets of three (in various sizes) for total aortic valve replacement. Mortality is high, but increasingly acceptable (approximately 20%) for many cases with an otherwise predictable hopeless prognosis.

The overall picture of total mitral valve prosthesis is less cheerful. Valves have been fashioned from Polyurethane with attached Dacron chordae tendinae, but the incidence of thrombus formation is high. Kay of Cleveland has an extensive personal series with a few brilliant results; however, the problems here are less well understood. More recently Merendino has utilized a ball-valve mitral prosthesis with initial success in a small series of cases. The majority of surgeons approaching the mitral valve by the open technique are currently adding plastic patches to make up for existing deficiencies. In some instances where the disease is confined primarily to the postero-lateral cusp it may be replaced by a compressed Ivalon pillow sutured to the valve annulus in such fashion as to provide an opposition post for the relatively normal aortic (antero-medical) cusp. Under these circumstances, many patients have shown marked clinical improvement for follow-up periods approaching five years.

E Complete heart block (or atrio-ventricular dissociation) may occur under a variety of circumstances. There are however two types of heart block which may be successfully managed by an artificial pace-maker which will provide the necessary systolic stimulus to maintain an adequate cardiac output. These clinical situations are the most frequently encountered with either heart block induced during intracardiac surgical procedures, or in the course of ischemic heart disease in which the conduction tissue is presumably involved by the ischemic process. Under some circumstances drugs which are ordinarily beneficial (e.g. Isoprotenol hydrochloride) fail to yield a continued or satisfactory response and a pace-maker unit may be life-saving.

The basic principles of the pace-maker is that it contain a circuit arrangement capable of delivering a variable amperage (up to 40 or 50 milliamps) across a resistance of 80 to 100 ohms (the latter figure applying to the human heart). The less current dissipated at the point of application of this electrical stimulus the smaller the amperage required, and the current density at the critical point, namely the myocardium, will be higher.

Electrical pace-makers are generally applied in two ways, external or internal. The external application consists of applying two flat electrodes at appropriate points on the chest wall. Understandably the amperage required here is fairly high and may result in considerable skeletal muscle twitching or cutaneous burning after a few days. Generally this method is applicable for short periods only. Where extended periods of stimulation are necessary internal application is more reliable, if not mandatory. To accomplish this a unipolar or bipolar electrode is implanted in the myocardium. The unipolar electrode may be introduced successfully by percutaneous needle puncture; however because of the dangers of dislodgement an open operation is to be preferred where the circumstances will permit it. At such times a conductive Teflon insulated wire is fixed in the myocardium and brought out percutaneously. The indifferent electrode is fixed subcutaneously beneath the skin of the chest wall. Long-term antibiotics and careful skin care are necessary to prevent spread of infection along the wire sinus tracts. In spite of such hazards, pace-maker applications of this type have been widely used successfully for periods of many months. A similar application in which both electrodes (bipolar) are implanted into the myocardium is also available, and is more efficient, being capable of operating at much lower milliamperage because of the reduction in current dissipation mentioned above.

In view of the precarious cardiac status of some patients who develop heart block following myocardial infarction, the introduction of a pace-maker electrode has been carried out by using a very fine, specially designed electrode in the form of a fine cardiac catheter. This is introduced into an antecubital vein and directed centrally until it makes contact with the myocardium of the right ventricle. Long term anticoagulants and antibiotics are required and dislodgement may occur as it does with a percutaneous intercostal application of the myocardial lead. Nonetheless this method may be satisfactory over a period of many months as well.

The pace-maker unit itself is small, self contained and portable, being slightly larger than the average cigarette package. It operates on a small mercury cell battery with a continuous operating life of many weeks or months. The ultimate achievement in this type of unit was the recent successful subcutaneous implantation of an entire pace-maker beneath the skin of the abdominal wall. This silastic encased unit is still smaller and has a battery life of about three years. It allows the patient to bathe or swim without fear of infection or dislodgement of exposed wires.

F Until our knowledge will permit us to effectively prevent heart disease, there are many who feel that the development of a complete prosthetic heart would indeed be worthwhile, an engineering feat which in this day and age is not wishful thinking.

Transplantation of the entire heart in animals has been accomplished by Shumway with survival of the recipient, (whose own heart had been excised) for periods of weeks. The ultimate success of such experiments is still limited by the inevitable rejection of the implanted heart by its recipient. With advancing knowledge the ultimate construction of a simple, implantable prosthetic myocardial unit activated by artificial currents is a fascinating challenge to both the medical and research engineering professions.

The Use of Prostheses in Vascular Surgery

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During the past ten years many changes have occurred in the surgical treatment of vascular disease and these changes are continuing. This period marks the beginning of the direct or reconstructive attack on blood vessels. Prior to this time surgeons were content with such indirect measures as the release of vasoconstrictor effect by sympathectomy; or the use of anti-coagulant drugs to lessen the possibility of thrombosis.

Arterial homografts were first used for reconstructive procedures. Gross[1] in 1945 reported on the use of homologous grafts to bridge resected coarcted segments of the aorta. In 1949 Swan[2] excised a coarctation with an associated aneurysm and restored continuity with a homologous graft. Following this, many thousands of arterial homografts were used throughout the world for replacements of segments of aorta and the major vessels. Diseased segments were sometimes resected and replaced by homografts; or were left in position, and the homograft used in a by-pass manner, as initiated by Kunlin and associates[3] in 1951.

However, though homografts played a major role in the extension of the field of arterial surgery, there were many drawbacks. There were the immediate difficulties of limited supply, time and expense involved in the procurement and preservation, difficulty with asepsis, thrombosis with obstruction, aneurysms in the smaller arteries, and latterly there has been evidence of the aneurysmal formation and marked calcification in aortic replacements, as illustrated in the following case:

Case No. 1: Mr. J. L.

September, 1957 — age 52 years. Pain in both legs — left leg more severe since 1951. Could only walk ½ block before onset of severe intermittent claudication. Coronary Thrombosis in July, 1957. Aortogram in September 1957 demonstrated patent and normal aorta and iliac arteries but bi-lateral obstruction of superficial femoral arteries just beyond origin of profunda femoris. Patient was advised to have bi-lateral femoral by-pass grafts. Patient then took x-rays to Montreal for consultation, where patient was given similar advice.

On January 14, 1958 a by-pass homograft was placed in left leg from common femoral artery to popliteal artery. A similar homograft was placed in right leg April 9, 1958. Both grafts remained patent and patient did very well. He had no claudication on walking several blocks.

The patient remained well for two years. In April, 1960, patient developed pain in left thigh. On examination both grafts were patent throughout their full extent. However, aneurysmal dilatations had developed in both femoral homografts, three on the right leg, and two on the left leg (Fig. 1).

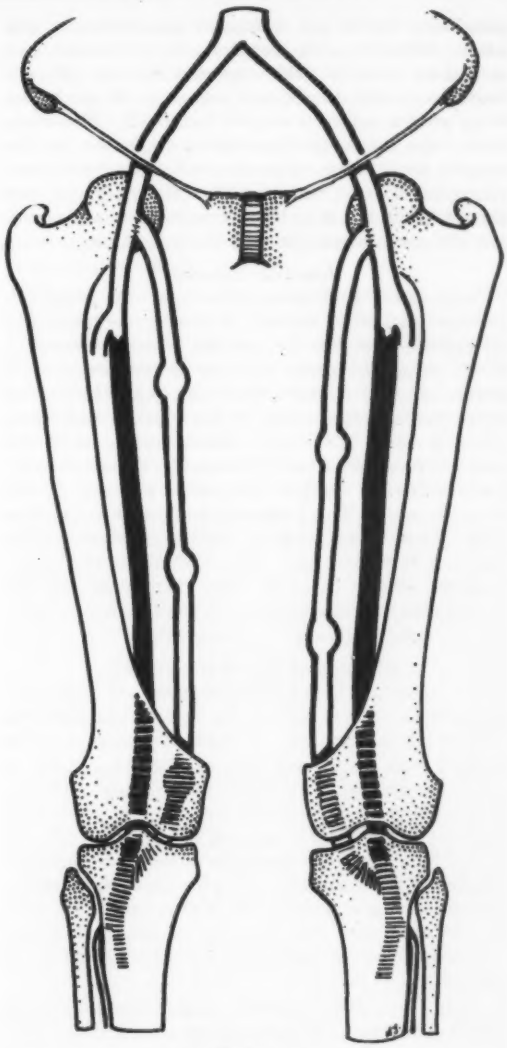

Figure 1
This drawing illustrates aneurysms which had developed in both homografts, after almost two and a half years.

June 17, 1960 — Admitted W. G. H. in unconscious state. He died on the following day. Autopsy revealed a ruptured cerebral aneurysm as cause of death.

This case illustrates the development of multiple aneurysms in bilateral femoral homografts. We may speculate as to what complications would have developed, had not intracranial hemorrhage led to this patient's untimely death.

Efforts in recent years have been directed toward developing satisfactory synthetic prostheses which could be readily available in any size, number, or shape and would not degenerate over the years as homografts have done. I will not describe types of

materials, which are discussed elsewhere in this issue. Pioneer work was done by Voorhees[4] and associates who, in 1952, reported the use of synthetic materials to replace segments of the aorta. They used a material named Vinyon-N. There has since been a variety of synthetic materials. At the present time Teflon (trade name for polytetrafluroethylene) is used considerably. However, we still do not know the true long term results and newer and different materials may be introduced.

Vascular Injuries

Only rarely is it essential to use any prosthesis for damaged blood vessels. A simple laceration can be repaired readily by arterial suture. However, in an injury of great violence or explosion with severe damage to the artery, and the defect is too great for approximation of the ends, a prosthetic graft is used. Certainly when dealing with the aorta a prostheses would be used. Spencer[6] et al, have reported on the traumatic rupture of the thoracic aorta. The preferred treatment is excision and replacement with a plastic prosthesis. The distal circulation can be maintained by atrial-femoral artery by-pass. However, with smaller vessels the decision must be made whether to use a prostheses or autogenous vein graft.

Abdominal Aortic Aneurysms

The history of the surgical treatment of abdominal aneurysms is remarkable in that it parallels the changes and advances in vascular surgery. This history can be traced through ligation, types of aneurysmotomy, wrapping with many different materials for promotion of fibrosis, and preventing rupture (Case No. 2), packing aneurysmal sac with many feet of wire to promote thrombosis, utilizing electric current through the wire to promote further thrombosis, vein inlay graft placed inside the open aneurysmal sac, and excision of the rare lateral saccular type of aneurysm with restoration of continuity.

Dubost[5] in 1951 reported actual resection of the aneurysmal sac and replacement with a homologous graft. As mentioned above, Voorhees and associates first reported on the use of synthetic materials for resection of the abdominal aortic aneurysms.

Resection of an abdominal aortic aneurysm and replacement by prosthetic graft is the acceptable treatment now for this condition. One of the most compelling reasons for recommending resection of aneurysms is that over 50% of patients who have developed a ruptured aneurysm, although aware of the presence of the aneurysm, have had no symptoms prior to the rupture. Also, it has been shown that the life expectancy is lowered in those patients, once an aneurysm has been discovered. Gryska, Wheeler and Linton[7] reporting from Massachusetts General Hospital in 1961 state: "A patient with an abdominal aneurysm has a completely uncertain prognosis despite the size or symptoms of the aneurysm. Thus we believe that aneurysmal disease is the apriori indication for surgery."

There are, naturally, certain limitations in the application of surgical replacement. Age and general physical condition are studied carefully. Physiological age is far more important than the chronological age, and many cases are reported over 70 years af age (Fig. 2). Most abdominal aneurysms are arteriosclerotic in nature with the rare case due to syphilis.

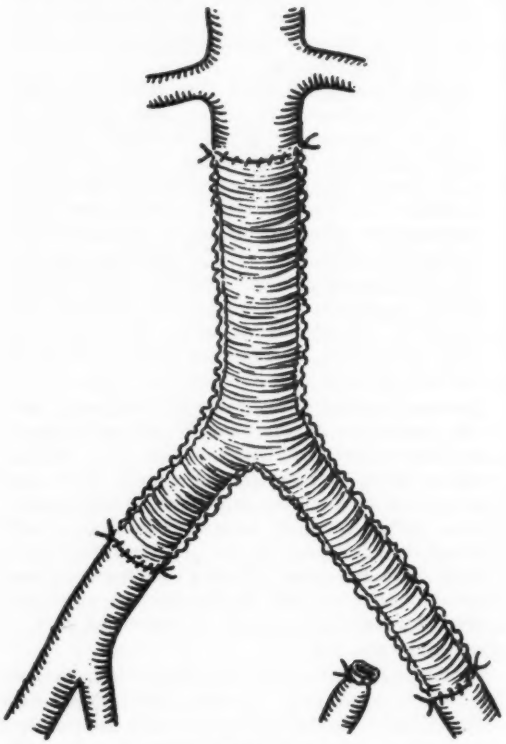

Figure 2
This is a representative drawing following the insertion of a prosthetic aortic bifurcation graft.

Renal function investigation is one of the most important preoperative studies to be done. Usually the aneurysm begins below the renal arteries, but, if there is arteriosclerotic involvement of these branches, surgical correction may have to be extended.

The mortality has decreased steadily and is now below 10% in many series.

Finally, a plea must be made to all physicians who have diagnosed ruptured abdominal aneurysm. Regardless of the almost hopelessness of the situation, an attempt should be made to resect these aneurysms. There are many cases on record of these semi-moribund patients showing remarkable recovery on the operating table following clamping of the aorta and restoration of blood volume.

Case No. 2 — Mr. V. S.

This 77 year old man was admitted to Hospital Nov. 14, 1956 with complaint of severe abdominal pain. Aortogram demonstrated an abdominal aortic aneurysm. Pulsations were present and normal peripherally. Operation was carried out Nov. 21, 1956. A large abdominal aortic aneurysm was dissected free, and decision was made to excise and graft. However, because of the poor general condition of the patient, this course had to be abandoned. The aneurysm was completely enclosed in double layer (with considerable overlapping) of a type of nylon which I had obtained previously after personal communication with Dr. Harris Shumacher of Indianapolis, Ind. The patient had a rapid convalescence. This patient has done well. He was last examined May, 1961. He has been doing very well. He has no abdominal pain, but has some pain and decreased pulsations in the left leg. He also has no palpable abdominal aneurysms.

Any type of wrapping procedure is not recommended. However, it is remarkable that this patient has survived more than four and a half years with wrapping of a large abdominal aortic aneurysm.

Case No. 3 — Mr. J. P.

Mr. J. P., 74 years of age was admitted to hospital June 3, 1959, with diagnosis of abdominal aortic aneurysm. On June 16, 1959 the abdominal aortic aneurysm was resected and a Teflon graft was placed in position, as shown in the above Fig. 2. The patient is now 76 years old and enjoys excellent health, and was last examined June 27, 1961.

Arteriosclerotic Occlusion of The Aorta and Iliac Branches

Once the concept of resection and replacement had been established in treatment of abdominal aortic aneurysms, it was soon applied to chronic occlusive lesions of the aortic bifurcation and iliac vessels.

Here again there are many variable factors associated with the diseased patient as to type and extent of involvement. This presents a more difficult problem for the surgeon than the straightforward resection of an aortic aneurysm, with good vessels proximally and distally.

Here the aim of surgical treatment is the restoration of good arterial flow. The extent of the disease process must be established. We must know if there is localized disease, or extensive obstructive disease, involving the renal arteries, aorta, and iliac arteries. It is also important to know the status of the femoral-popliteal arterial system. The extent of disease can be established by the physical findings, aortograms and arteriograms taken during operations.

Once the type and extent of disease is established, a choice or a combination of procedures is available. Good arterial flow may be re-established by endarterectomy, excision and graft replacement, excision and graft replacement with by-pass, end-to-side graft by-pass, or a combination of these procedures. Endarterectomy may be used in cases of well-localized occlusive disease. In cases with localized disease but with more destructive changes extending through the muscular and advential layers, making the "peeling-out" difficult and hazardous, excision with graft replacement is the procedure of choice.

However, in most cases and particularly in older patients, the by-pass graft procedure is preferable, because it can be done with the least dissection, thus disturbing fewer collaterals. It is important that the distal anastamosis be implanted in a vessel in which good flow may be re-established, whether it is in the iliac, femoral or popliteal level; and that the anastamosis be end-to-side in order collaterals above and below may benefit from the new flow.

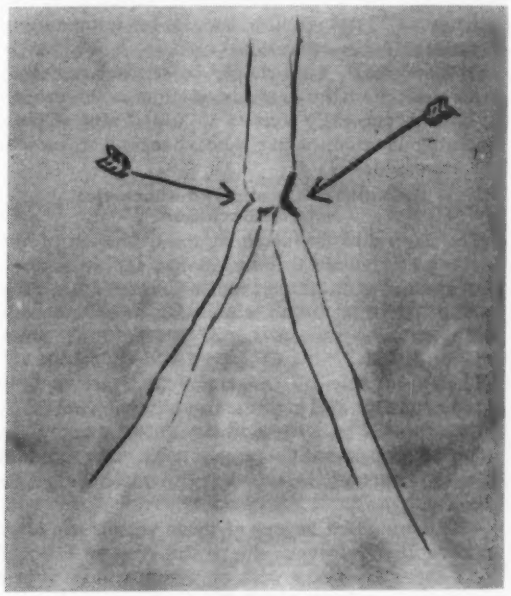

Figure 3

In this case of a 64 year old female, because of the poor general condition of the aortic wall, it was thought unwise to attempt endarterectomy. In such a case, excision and prosthetic graft replacement was the procedure of choice, with restoration of good distal pulsations, which were absent pre-operatively.

Femoropopliteal Occlusions

Femoropopliteal disease may also be localized or diffuse. Extent of disease may be judged by physical examination, severity of symptoms and x-rays. Some diffuse types of disease are not suitable for direct operation, when the obstruction extends down into the popliteal artery and into the small vessels of the calf. Lumbar sympathectomy is the operation of choice here.

When there is patency of the popliteal artery and distal arterial bed, restoration of blood flow may be accomplished.

The surgeon has a choice of direct surgical procedures, as mentioned previously. Endarterectomy alone for short segments of disease are able to be done in only a small percentage of cases (Debakey —4.4 percent). More extensive endarterectomies using autogenous vein for widening has also been tried recently. Excision and graft replacement has been abandoned. The by-pass graft operation using prosthesis is the procedure of choice.

Recently, there has been discouragement mentioned by some physicians because of the high failure rate reported by some groups. Results do vary widely. Many factors enter into chances for success, including experience of the surgeon, choice of patient, familiarity with vascular surgical techniques and close attention to many details. Excellent results should be obtained in a high percentage. Recurrent obstruction, whether "early" failures or "late" failure should be immediately considered for re-operation.

One technical detail should be stressed and that is the calibre of the graft in relation to the artery. It is now generally agreed to use grafts of considerably large diameter, and chances for success are increased.

Innominate, Carotid and Subclavial Arterial Occlusion

The causes of occlusion of these vessels of the aortic arch include trauma, tumor, syphilitic aortitis, dissecting aneurysm and atherosclerosis. The most common of these occlusions is arteriosclerotic and it tends to assume one of two patterns, proximal or distal.

Lesions arising on the aortic arch are usually more extensive and are best treated with prosthetic grafts applied by by-pass technique. Debakey has reported considerable success with this type of disease using combinations of bifurcation and single prosthetic grafts.

The more distal lesions of these vessels are often inoperable. However, where the disease is localized, endarterectomy with or without the use of a prosthetic patch to widen the vessels may be successful. Temporary Shunts may be used to maintain circulation if required during these operations.

Thoracic Aorta

Aneurysms of the thoracic aorta may be caused by syphilis or arteriosclerosis, with the latter now predominating. Dissecting aneurysms result from degeneration of the media.

The treatment of aneurysm requires extirpation of the lesion and restoration of normal circulation. This type of operation carries a higher mortality than the lower abdominal aortic lesion. Here the involved segment must be isolated, whether it be in the arch or descending thoracic aorta, and circulation maintained by some type of atrial-femoral by-pass, to prevent ischemia of sensitive tissues, and prevent myocardial strain. Following isolation the diseased segment is excised and replaced by a prosthetic graft.

Summary

In the past decade impressive advances have been made in the field of vascular surgery and more especially in the use of prosthetic materials. Rehabilitation of many patients has been made possible by this reconstructive surgery, and also lives both lengthened and saved.

One important point which must be stressed here is the responsibility of the general practitioner and internist to be aware that such advances are constantly being made, so that the maximum number of patients may benefit.

Results will continue to improve, because of many factors, foremost which is doubtless the development of new and better blood vessel prostheses.

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Vascular Prostheses

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Many types of vascular prostheses have been developed since demonstration by Blackmore and his group in 1952 that synthetic materials could be used as arterial substitutes. These have differed in respect to the synthetic thread used, the size of the yarn, the tightness of the weaving and the form and shape of the prosthesis. The great advantage of these textile prostheses is their availability and freedom from problems of sterilization. The disadvantage is that these prostheses always represent a foreign body. This point assumes major importance in the event of contamination at the site of operation. Another disadvantage is the lack of elasticity in such prostheses after implantation. While it is true that by micro-crimping of the tube, or knitting the tube and micro-crimping it, what appears to be elasticity is imparted to the tube. However, the tube is merely a framework for the host to lay down a fibrous tissue in the interstices of the tube and a pseudo-intima within its lumen. This fibrous tissue, of course, imparts a rigidity to the tube with consequent disadvantages, particularly in small tubes and those which are required to cross a joint of flexion. This loss of elasticity is not limited to synthetic materials because even in homografts elasticity is reduced in the course of time.

At the present time, the very best arterial substitute is no doubt an autogenous artery, but the only artery available of any size that can be used in this regard is the splenic artery, and this is sometimes used in by-passing left renal artery obstruction and has been used to by-pass right renal artery obstruction. In small vessels (femoral or popliteal) there is a marked tendency currently to use autogenous veins which, of course, require to be placed in the opposite direction to which they normally lie because of the presence of venous valves. The apparently high rate of occlusion in femoro-popliteal by-passes, using synthetic materials, has led some surgeons to make a combined tube using an ordinary textile prosthesis for the major length of the tube and an autogenous vein for the part that is required to cross the knee joint.

Synthetic replacements are extremely satisfactory for use in the aorta. They are the preferred material and the results are most satisfactory. A significant loss in tensile strength occurs in Nylon and Orlon and at this time the most satisfactory material appears to be Dacron or Teflon. Whether a Dacron or Teflon tube is used depends on their inherent difference in handling and is usually dependent upon which type of prosthesis the surgeon is accustomed to use. The knitted Dacron tube illustrates a difference in characteristics of prostheses; although it is easy to handle and does not fray it is extremely porous. Consequently, in a patient with total body heparinization, the porous Dacron tube can bleed through the mesh of the textile to an alarming degree for considerable periods of time despite the use of Heparin antagonists (Polybrene and Protamine Sulfate) and preclotting. Yet another factor in the choice of prosthesis is that it is thought by some that a degree of porosity is to be preferred.

At the present time the choice of the arterial substitute is influenced mainly by the level in the vessel that the replacement is required. At the present time, the following replacements are thought to be most suitable:

1. Aortic level — textile prosthesis
2. Iliac level — textile prosthesis
3. Femoro-popliteal — autogenous vein replacement, also textile prostheses are frequently used.

The relationship of the prosthesis in size to the size of the host artery is of some importance from experimental work conducted by Szilagyi. The optimal ratio between the host and prosthesis appears to be approximately 1:–1.4 to 1:–1.6.

It should be pointed out that in certain patients with occlusive disease no prosthesis or substitute for the occluded artery is advisable, and thromboendarterectomy of the occluded segment is the method of choice for restoring circulation.

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Obstetrics & Gynecology

Editor's Note:

The copies of the two lectures given by the late Dr. V. B. Green-Armytage at the 1960 Regional Meeting of the International College of Surgeons and The Manitoba Medical Association in Winnipeg were mailed to us shortly before their author's untimely death in April 1961. The slides and illustrations that were to follow did not arrive. The papers are, thus, of necessity incomplete. This, however, should not detract from their intrinsic value, nor from their significance as mementos of the distinguished author's visit to our city.

* * *

Tubal Occlusion—The Combined Medical and Surgical Technique

V. B. Green-Armytage
M.D., F.R.C.P., F.R.C.S., F.R.C.O.G., Hon. F.I.C.S.

Ladies and Gentlemen:

Despite the universal exhibition of antibiotics and sulpha drugs at, or even before, any suspicion of sepsis, tubal occlusion still accounts for 15-20 per cent of all cases seen and investigated by experts in clinics dedicated to the study of infertility.

In the past, venereal, and full term postpartum, infection were the commonest causes, but today faulty knowledge of contraceptive practice, together with gross relaxation of morals, unquestionably hold first place.

For if there be any slip-up in the method used by the unmarried or recently married, then all too often this is countered by criminal or induced abortion, which in many cases results in silent occlusion at the cornua or isthmus—an occlusion, which alas, may only become demonstrable after a marriage unwittingly hallowed under false pretences.

Ladies and gentlemen, is it not paradoxical, is it not sinister, is it not frightening to think that with perfectation of oral contraceptive technique and its temptations, the moral standards of the teenager and adolescent must still further decline, although pari passu the occurrence of tubal occlusion at the cornu will diminish?

Moreover, at this juncture I would remind you that, for much the same reasons, the incidence of ectopic gestation during the last decade has almost doubled, and that more and more patients are admitted annually into every general hospital.

Nevertheless for such "damaged goods," as Ibsen called them, there is still hope in tubo-uterine implantation—an operative technique based upon the principle of the sleeper in the pierced ear, for you must always bear in mind that the outer or distal two thirds of tubes, blocked at the cornua as a result of streptococcal infection of secundines, are in 80 per cent of cases absolutely healthy and patent. Moreover, you will find no palpable pathology whatever present to complicate matters.

It is such cases of cornual or isthmial block (hitherto so hopeless) that are the challenge today. They demand tubo-uterine implantation, and provided you do not make a transverse incision, and possess the essential instruments, your success should be between 40-50 per cent from a patency and pregnancy point of view.

There are of course other causes of occlusion, and for many of these we gynaecologists are unquestionably the guilty men: namely the quite unnecessary D. & C., the quite unnecessary endometrial biopsy, and those other causes where thoughtlessly and regrettably we have ligated tubes at the time of some operation, such as hysterotomy. But, should you have performed the Madlener or Cornual Sterilization Operation, then you will obtain at least 50 per cent success by implantation.

So let me first show you a few slides of this particular condition as seen after abortion and anaerobic streptococcal infection, and then demonstrate the technique by a short film. But before you see the film I want to show you a few pictures of the fundus after tubo-uterine implantation, taken at the time of Caesarean Section, although of course such an operation is not essential unless you are compelled to do so by some obstetrical reason.

Now I come to cases of tubal occlusion at the fimbria associated or not with a minor degree of hydrosalpinx, but please remember not, and never pyosalpinx.

In the past some surgeons have done nothing; others have but played with or teased such tubes; still others (horribile dictu) have done Salpingectomy, or even Hysterectomy.

In 1956 and 1958 Bennoun of Paris and de Moraes and Peano of Rio de Janeiro first suggested, and then reported, remarkable results in such cases of obstruction if treated by intrauterine injections of steroids plus antibiotics once a week for six or more weeks. Indeed, in Brazil, in more than two thirds of their cases they claimed just such a high degree of success from the point of view of pregnancy and patency—this as the French would say was indeed "formidable."

Let me show you the type of case they speak of as seen at Laparotomy.

Six slides are shown and the seventh actually pictures the P.S.C. in situ injected just before opening the abdomen.

Presented at the Annual Meeting of the Manitoba Medical Association, Section of Obstetrics and Gynecology, Marlborough Hotel, Winnipeg, September 26th, 1960

But in London after careful clinical and radiological assessment and following the Brazil technique exactly, I could not achieve anything like their success. May be my cases were of too long standing. May be the kinking or deformity was too great and the adhesions too rigid. Whatever the reason I decided to combine a medical technique with a surgical approach. By that I mean the patient is given for a week before laparotomy antibiotics and prednisolone, together with 500 I.U. of Chymar intramuscularly the day before, on and after surgery, and Bepanthen, 500 mgr. I.V. B.D. for 3 days.

At the time of operation P.S.C. (which is sold in ampoule form or is made up freshly prepared, containing 100 mgrs. Procain; 1 gramme of Streptomycin and 25 mgrs. of Cortisone, dissolved in 10 ml. of distilled water), is injected either fundally, or after fimbriolysis or cuff incision directly into the trumpet end of the tube. Diminishing doses of Prednisolone are then given during the two post operative weeks.

If your operative technique has been visibly successful, and after ventro-suspension of the uterus, and the ovaries have been lightly sutured to the upper part of the posterior surface of the uterus, it is imperative that a Rubin's Test should religiously be performed every seventh post-operative day for 3 - 6 weeks.

If this is done your success as regards pregnancy will be not less than 30 - 40 per cent, though ectopic gestation may occur in two per cent.

There is just one point that must be stressed, namely that every patient so treated must be given on discharge a card stating that she has had cortisone treatment. This she must show or tell to any future anaesthetist.

First I shall show you eight slides of the fundal and fimbrial technique and suture to the back of the uterus. Then in nine slides various techniques such as linear incision of the tube when necessary. You will see the flooding or emergence of the P.S.C. from the isthmus which stops oozing and the incidence of future adhesions. You will see the use of Polythene Tubing at other times. You will observe also small technical variations which help you, and a few CO.2 follow-ups. Finally I shall show you the steps of implantation and then a film where there was fimbrial occlusion on one side and isthmial block on the other.

Ladies and Gentlemen, these are the techniques that challenge you today. You must become the Bayards sans peur et sans reproche to these sad women. Therefore never must you forget these words written on the fly leaf of Oliver Cromwell's Bible: "if I cease to get better, I cease to be good." For did not Aristotle 2,300 years ago say "it is a poor pupil who does not outdo his Master"?

To you of the younger generation, then, I say Excelsior.

Vaginal Hysterectomy — Its Scope as Result of 3,000 Operations

V. B. Green-Armytage
M.D., F.R.C.P., F.R.C.S., F.R.C.O.G., Hon. F.I.C.S.

Fifty years ago the great Eugene Doyen said that no man should call himself a gynaecologist unless he could do a Vaginal Hysterectomy in private. Only those who have repeatedly done this operation know that Vaginal Hysterectomy is the best test of the famous surgical maxim "surgical wisdom is the daughter of experience."

Although Vaginal Hysterectomy has been performed for over 1,000 years for prolapse, it was not until 1799 that it was first done in Great Britain by Alexander Hunter for the haemorrhagic uterus, that same year I would remind you that another Hunter, the great John, first successfully performed an artificial insemination.

Any Registrar can perform a Vaginal Hysterectomy for prolapse — this is an easy operation without tax upon skill or anatomy.

But I would have them do it for fibroids up to the size of a tennis ball or a three months pregnancy, for metropathia, and horrible conditions of the cervix which are not cancer, and above all for carcinoma in situ — the so-called zero stage — for which it is ideal.

I have travelled all over the world and visited many scores of foreign clinics, including those of Russia, and it is my belief that one of the reasons for the unpopularity of this operation is the Posterior Speculum that is used in so many clinics still. I refer to the Ovard. This instrument should be in the museum along with Fromer's Dilator and the tonsil guillotine. It is too short and too narrow and gives no vision, and without vision a patient may perish.

Another reason is that for more than two decades a primitive form of arterial or broad ligament clamp has been advocated and alas! — used with the result that haemorrhage, sloughing and ureteric fistulae have occurred as never before, and what is even more remarkable for the first time numbers of deaths from embolism have been recorded—a thing that practically had never been seen hitherto after a vaginal operation.

I shall show you in the short film:

(1) the antenatal method of securing freedom of any anxiety from bleeding.

(2) how to avoid injury to the ureter.

(3) how to prevent such snags as vault prolapse or rectocele or cystocele.

(4) the use of a real speculum and the use of a special hook or blunt reverdin.

(5) the method of pushing the ureters to one side with two forefingers and the making of a central bridge.

Presented at the Annual Meeting of the International College of Surgeons, Canadian and United States Sections, Marlborough Hotel, Winnipeg, September 29th, 1960.

These are the real issues and they must be seen and taught. On top of these never forget that the patients must be put back to bed with the foot of the bed raised for at least two days to prevent ileus.

If these points are observed then your mortality should be almost zero. In my first 150 operations for conditions other than prolapse my mortality was two per cent and that was over 40 years ago. In my next 1,000 it was 0.8 per cent and the next 1,000 operations it was 0.3; and in the last 900 I have had but one death. In three cases out of 3,000 I had to open the abdomen for secondary haemorrhage and ligate the internal iliacs. In three there was obstruction of the bowel, necessitating laparotomy. In five there was an infected haematoma in the pelvis demanding posterior colpotomy. There has been no case of embolism, but in five there was thrombophlebitis. In no case was the ureter cut but in one the base of the bladder was traumatized causing a small fistula to form on the 10th day. This was cured by intra vesical cauterization.

It is my view that Vaginal Hysterectomy should be far more popular and far more often done than it is for those conditions of the uterus which are not prolapse, for the simple reason that the shock is less and the cost of hospitalization far less. Moreover, should a pelvic repair operation be needed it can be done at the same sitting.

Never have I had to make a Shuchardt Incision in these 3,000 cases for I have never held with the Schauta Operation for cervical carcinoma, though that of Subodh Mitra followed by abdominal lymphadenectomy is attractive.

Obstetrical Memoranda

A. H. Bartley
M.R.C.S. (Eng.), L.R.C.P. (Lond.), L.M.C.C.

In view of the rarity of bilateral ectopic pregnancies, I should like to report a case of ectopic pregnancy in both fallopian tubes, at an interval of 19 years between each pregnancy in a nullipara.

The patient is of Ukrainian stock, and was 21 years old in 1941, when she became pregnant soon after marriage. She was about 2½ to 3 months pregnant when she had a ruptured ectopic pregnancy of the right fallopian tube, which nearly ended catastrophically, as she had to travel a distance of over 40 miles to have the necessary surgery done, with blood transfusions. She remained nulliparous until October 1960, when she came to see me regarding pains and cramps in her lower abdomen. Her L.M.P. was August 1st, 1960.

In September she had some "spotting" p.v. On October 14th, 1960, upon examination, I suspected an ectopic pregnancy in the left fallopian tube, and advised her accordingly, suggesting that she should go into hospital and have a laparotomy, if a sudden attack of pain occurred. On October 29th she reported that she felt something was going to rupture. I advised an immediate laparotomy and found an ectopic pregnancy in the left fallopian tube, consistent with her period of pregnancy.

Her age was 41 years on this occasion, and she made an uninterrupted recovery.

. . . The prime objective of a hemorrhoidectomy is to remove the offending varicosity with as little damage as possible to the patient. You can damage, deform, ruin, remove, abuse, amputate, maim, or mutilate every structure in and around the anus except one. That structure is the **sphincter ani.** There is not a muscle or structure in the body that has a more keenly developed sense of alertness and ability to accommodate itself to varying situations.

They say that man has succeeded where the animals fail because of the clever use of his hands, yet when compared to the hands, the sphincter ani is far superior. If you place into your cupped hands a mixture of fluid, solid, and gas and then through an opening at the bottom try to let only the gas escape, you will fail. Yet the sphincter ani can do it! The sphincter apparently can differentiate between solid fluid, and gas. It apparently can tell whether its owner is alone or with someone; whether standing up or sitting down; whether its owner has his pants off or on. No other muscle in the body is such a protector of the dignity of man, yet so ready to come to his relief. A muscle like this is worth protecting! . . .

Dr. Walter C. Bornemeier, Journal of Proctology.

Maternal Death Study

A. Campbell McInnis
M.D., M.R.C.O.G., F.R.C.S. (C)

Part I — The Need

One certain method of gauging our progress in Obstetrical care in Manitoba is an examination of the Maternal Mortality rate. With the study of such cold statistics certain facts must be kept in mind. The death of any woman in childbirth is a tragic occurrence. It represents the loss of a young person, an integral part of a family, usually a mother to other children, who has previously been in good health. To the relatives and friends it is a shock which is remembered and may have far-reaching psychological effects on prospective mothers. The physician is not left unscathed. For him it may mean a desperate struggle with no regard for time or circumstance. There may be frustration due to lack of facilities, equipment, drugs or blood transfusion. Finally, the question must be asked whether the death could have been avoided. Whether the answer is yes or no there is always a certain questioning in the community which may have its effect on the attending physician.

With these realistic thoughts in mind, let us examine our standing in this province.

The maternal mortality rate or obstetric death rate is the number of maternal deaths per 1,000 live births. Dr. Ross Mitchell[1] has very ably reviewed the decline in the maternal death rate in Manitoba. He draws attention to a report of a Canadian study between July 1st, 1925 and July 1st, 1926[2]. The rate for Canada was 6.4 per 1,000 live births. Manitoba had the highest rate with 7.7.

An intensive study was done in Manitoba from May 1st, 1938 to April 30th, 1940[3]. During this time there were 89 deaths assigned to puerperal causes giving a maternal death rate of 3.26. In 1948 the rate was reduced to 1.4 and in 1952, it was reduced further to 0.5 deaths per 1,000 live births.

The following table shows the death rate from 1952 to 1960 inclusive[4]:

1952	1953	1954	1955	1956	1957	1958	1959	1960
0.5	0.7	0.4	0.7	0.3	0.4	0.6	0.6	0.4

The decline from 1925 is undoubtedly an achievement. However, when the above table is scrutinized it can be observed that we have arrived at a "hard core" of resistance. The question might be asked whether this represents an irreducible minimum. The answer is no for a number of reasons. Perhaps the main reason is that lower rates have been achieved elsewhere. Rosenfield[5] records that in 1951 Connecticut and Oregon reduced their rates to 0.1 deaths per 1,000 live births. Another reason is that we are still having a considerable number of preventable deaths. An analysis of the deaths from 1952 to 1960 shows that toxemia of pregnancy and hemorrhage accounted for 58% of the maternal deaths. Since preventability is an important factor in these two causes of death, it would seem pertinent to discuss them.

27% of the maternal deaths from 1952 to 1960 were due to toxemia. The control of toxemia is based mainly on adequate prenatal care. Through education the prenatal care in this province has reached high standards in most areas. However, certain districts have failed to show these improvements. A recent unpublished survey[6] of certain areas in the province provides one example of 102 births conducted by 10 physicians, where there was no prenatal care (i.e. 1 or less visits) in 60% of these pregnancies. Another group of 62 pregnancies had no prenatal care in 64%. The danger of toxemia and other obstetric difficulties is obvious under such circumstances.

Hemorrhage accounted for 31% of the deaths during this period. Whereas the control of toxemia is based on good prenatal care, survival in instances of severe hemorrhage depends upon a skilled physician or team of physicians working with an adequate hospital staff with good facilities and an adequate supply of drugs and whole blood. Observation suggests that more of these critical cases are being saved under such ideal circumstances in larger hospitals. Figures seem to substantiate this fact. During the four years 1957 to 1960 there were 25 deaths due to hemorrhage in Manitoba. 19 occurred in rural areas and six in the larger cities. The difficulties encountered by the rural physician are obvious. Not infrequently there is no obstetrical attendant and the physician may be summoned from a distance after the death occurs. In other instances he is called too late. He may be hampered by lack of hospital facilities and a supply of blood. To obtain, cross-match and administer blood as well as resuscitate and treat medically or surgically a critical obstetric hemorrhage is more than one can expect from a single physician.

These then are some of the problems which must be solved before the maternal mortality rate will be improved in Manitoba. One method of attacking these problems is a thorough study and investigation of each maternal death. The avoidable factors are determined and the situation is remedied, if this is possible. This type of continuing maternal death study has proven its value in other Canadian provinces and areas in the United States. The method planned for this province will be discussed in a subsequent paper.

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Medicine

Pyogenic Vertebral Osteomyelitis

J. F. S. Hughes, M.D., M.Sc., F.R.C.P.

Osteomyelitis as seen in various bones of the body is notorious for its chronicity, lack of early signs, and delay in x-ray change. However, knowledge of this disease is widespread, and it is seldom excluded in the differentiation of patients with bone pain, fever and leucocytosis. Pyogenic Osteomyelitis involving the vertebral bodies on the other hand, is seldom considered in the differentiation of back pain; sometimes because it is considered to be very rare, and more often, I feel, because many doctors do not know of its very existence. Kulowski[1] reports an incidence of 3.9% in large groups of patients with all forms of Osteomyelitis. Certainly, on reviewing the literature[1-8], many cases with this condition have been reported and I feel that, although this condition is not common, it certainly cannot be considered rare.

No doubt the protean and insidious nature of this condition may often pose a real problem in diagnosis and, certainly, in its chronic form, may be missed for months; the patient, meanwhile, suffering continuing pain and morbidity. In the less benign form, delay in treatment may lead to permanent disability and death.

I make no apologies as an Internist for discussing a disease commonly considered to be Orthopedic, as back and skeletal pain, the main symptoms of this disease, constitute problems in all branches of the Specialties and particularly to the General Practitioner.

How then are we to pick cases of Pyogenic Osteomyelitis out of the huge reservoir of patients complaining of back pain? It is my hope that this paper may help by describing the natural history of this disease and bring out some of the pitfalls in diagnosis.

The primary presenting complaint in all patients, is pain, which due to the depth of the lesion may for some time be widespread, showing skeletetome or dermatome referral with little or no evidence of local spine disease. The onset of pain may be acute or more frequently insidious. The acute form is rare nowadays, possibly due to the use of antibiotic cover for so many procedures. This form has an explosive onset and may even suggest an acute suppurative arthritis of the hip, acute abdominal disease, or even meningitis, depending on the widespread referral of pain and muscle spasm. There is usually a high fever and definite leucocytosis. Sometime later in the course of the disease, signs of local spine involvement occur. Although the location of the infection in this type of Pyogenic Osteomyelitis may be difficult, the clinical picture points to the presence of pus somewhere in the body and on repeated x-rays and close observation of the patient, the presence of Osteomyelitis usually becomes apparent.

In the more common insidious form, systemic manifestations are absent or minimal. The patient compains of little else except pain, the temperature being normal or only moderately elevated and, at least, in the early weeks or months of the disease, general health is little affected. The pain is usually intense and sharp, not relieved by rest and made worse by coughing or sneezing. Another feature, making the diagnosis of this condition very difficult, is that early in the course, pain may be intermittent; this being especially so if antibiotics have been given for various reasons. This combination of severe complaints of pain with few objective findings, will often tempt the diagnosis of psychoneurosis.

In most cases, inquiry into the recent past history will show either an episode of furunculosis or a history of some genito-urinary procedure such as a T.U.R. cystoscopy vaginal repair, etc.

Localizing physical signs may be absent at first and usually it is not until the third to sixth week from the onset that local spine tenderness brings one's attention to the vertebrae as the site of disease. This is particularly true when the infection is confined to the body of the vertebrae. These localizing signs may also be overshadowed somewhat by the presence of widespread muscle spasms involving not only the back but also the extremities, chest and abdomen, depending on which vertebra is involved.

Neurological findings, which occur in less than half the cases are due to nerve root involvement at first and later to encroachment on the spinal cord by granulation tissue, abscess or gibbus or by interruption of the vascular supply.

The hematological changes in this condition are rather typical, but perhaps misleading in that the white cell count is normal in most individuals and in the rest, only moderately elevated, hardly suggesting infection. The sedimentation rate, however, is almost always high.

The x-ray findings within the first month from onset of the disease are minimal or absent in most cases, and often can only be demonstrated by Laminography. The earliest sign is simple disc narrowing, with subsequent bone destruction. Later on, new bone formation and increased density of the vertebrae is consistently seen. This increased density of bone on x-ray is the most reliable differentiating feature in distinguishing Pyogenic Osteomyelitis from acid-fast infection.

Presented at the Annual Meeting of the Manitoba Medical Association, September 27th, 1960.

The organism most commonly recovered from these lesions has been the Staphylococcus Aureus Coagulaze positive; Pseudomonas Aeroginosa and E Coli, being the next most frequent.

Differential diagnosis must include various conditions. Metastatic disease is suggested by the pain and bony lesions on x-ray and certainly Tuberculosis must still be strongly considered. Brucellosis affecting the spine can usually be ruled out by agglutination tests. Simple collapse from trauma or associated Osteoporosis will often present a difficulty in differentiation.

Certainly, if Osteomyelitis is suggested from the history, the past history, x-ray and laboratory findings, the only means of establishing the diagnosis is by open or closed biopsy of the affected vertebrae. Closed biopsy by a Craig Trocar Needle will give not only histological material, but is especially helpful in obtaining culture of the offending organisms in a high percentage of attempts, thus allowing antibiotic sensitivity tests to be done which are so important for effective therapy.

The natural course of this condition, with or without neurological complications, is one of chronicity and even with the use of antibiotics, hospital stay averages four months. Once the diagnosis is made, treatment consists of bed rest, spine immobilization with plaster shell or plaster jacket and antibiotics. Even with this therapy however, recurrence is not uncommon; and because of this, Waisbren and his associates[6] have suggested the addition of Gamma Globulin to the therapeutic regime, and feel that this therapy cuts down on the frequencies of these exacerbations. The following is a case history of one patient who shows some of the features of this condition.

Mrs. M. C. — was first seen October, 1959, for a routine examination at which time the only complaint was stress incontinence. Her sedimentation rate at this time was 7 mm/hr. (Westergren). In mid-December she developed furunculosis which cleared on antibiotics. On March 15th, 1960, she underwent a vaginal repair, but on the first postoperative day, she developed a fever, sore throat, with muscle aches and pains. The sedimentation rate one week later was 110 mm/hr. and the white cell count 7,900. X-rays showed some poorly defined changes in both lung fields, but the vertebral bodies were normal (Fig. 1). Blood cultures and virus cultures done at this time were negative. She recovered from this episode and was discharged March 26th. A week later, she noted the onset of pain on the left side of her chest below the scapula, which radiated around the chest anteriorly and occasionally to the right posterior chest. The pain was made worse by deep breathing. She was readmitted to hospital on April 3rd, at which time her white cell count was 15,000 and the sedimentation rate remained at 110 mm./hr. Chest x-rays at this time showed a loss of volume and infiltration in both lung bases, but no change in the dorsal vertebrae was demonstrated (Fig. 2). The pain eased with

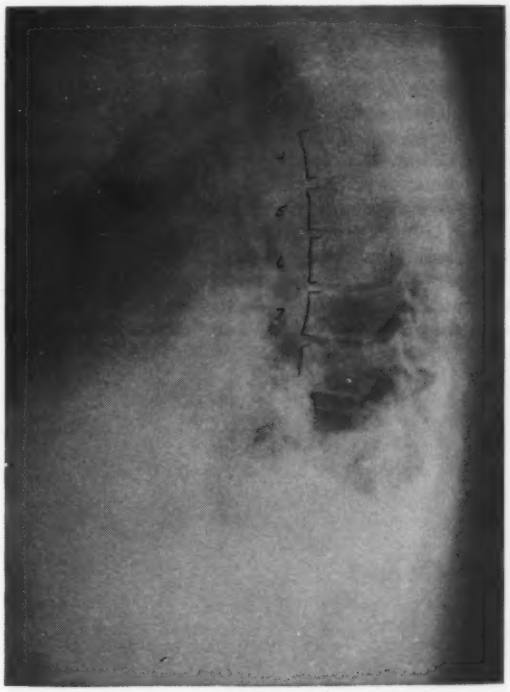

Figure 1

Figure 2

bedrest and antibiotics and the lung lesions cleared. She was discharged April 16th, but was without symptoms for only a few days, when there was a recurrence of her chest pain. This time, the pain was ill-defined and diffuse, but later took on the more typical appearance of root pain. Shortly before admission she began to have local spine pain and weakness in her right leg.

On readmission May 4th, she showed a sensory deficit from T10 down, her white cell count was 16,000 and the sedimentation rate was again 110 mm./hr. X-ray of the dorsal spine at this time showed collapse of the Dorsal 5 Vertebral Body with the disc spaces being well maintained (Fig. 3).

Figure 3

A lumbar puncture showed a complete block. Her sensory level climbed to D5 and she began to show long tract signs. A needle biopsy was done on the 5th Dorsal vertebrae and showed on section osteomyelitis with staphylococci present. The culture grew staphylococcus aureus coagulase positive. Her paraplegia soon became complete, with urinary and fecal incontinence.

Therapy was begun with bedrest and nursing on a Stryker Frame. She was put on Chloromycetin, and later Erythromycin and Kanomycin was added because of rather poor response. Gamma Globulin was also given. Her paraplegia began to recede; she regained considerable muscle power but the sensory deficit remained. At the time of writing, she is walking with the aid of two canes.

In retrospect, it would seem that the onset of the disease process probably dated back to her immediate post-operative period, at which time she had fever, diffuse pains and a high sedimentation rate. It is of interest to speculate on the means by which infection reached the dorsal vertebrae in this patient. She, certainly, had an episode of furunculosis some months previous, and it is possible that this could be the initiating lesion. However, the close relationship of the onset of her symptoms to a vaginal repair suggests some relationship. It is well documented now, following the work of Batson in the United States and Breschet in France, that there is an anatomical pathway

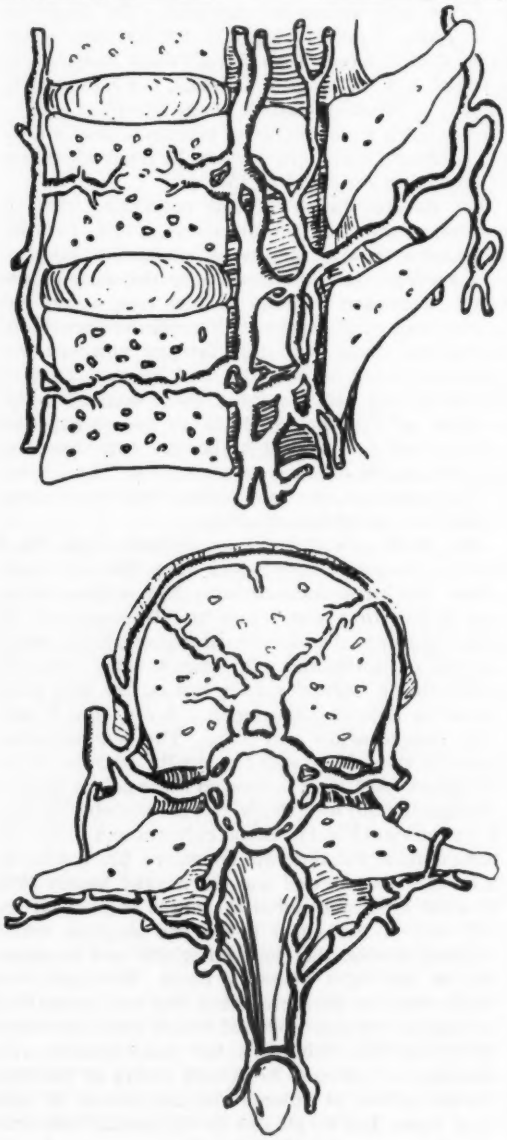

Figure 4

linking the pelvic venous plexus, the venous plexus investing the vertebral column and the intracranial venous sinuses. Breschet also demonstrated by isinglass injection of this venous system, that there is a rich anastomosis between the vertebral veins and the venous channels within the vertebral bodies (Fig. 4). Although there is an anatomical connection, under ordinary circumstances the current of flow does not ascend and descend; but rather, each separate trunk receives blood and conveys it to the general circulation via the connections of this paravertebral venous plexus with the systemic veins, the pelvic and lumbar intercostals and the vertebral. Batson, however, in 1940, showed that if the intra-abdominal pressure was raised, the current of flow would change and blood would ascend along the paravertebral venous plexus. Henrique[5], and other authors have noted the frequency of vertebral Osteomyelitis following urological procedures and explain the ascent of infection from genito-urinary system to the vertebral bodies by this mechanism. Likewise, Sherman and Schneider[4] have noted cases of vertebral Osteomyelitis following post-abortal and post-partum infection. Garcia[7] et al quote a patient who developed Vertebral Osteomyelitis following a vaginal repair.

It is suggested that this is a possible explanation in the present case. Unfortunately, vaginal cultures were not obtained at the time and therefore absolute proof of relationship could not be made.

In summary, I have attempted in this short paper to bring to your attention the clinical course and laboratory features of a condition which is seldom thought of in the differential diagnosis of back pain. It is my impression that Pyogenic Vertebral Osteomyelitis is not a rare condition. Certainly, in 1960, two other cases of Vertebral Osteomyelitis were brought to my attention by various Physicians in this city. As this condition produces prolonged morbidity and as it responds well to medical therapy once the diagnosis is made, it behooves us all, as practicing physicians, to include this disease in our differential diagnosis of patients with back pain, especially when there has been a past history of furunculosis or surgical procedures on the genito-urinary tract.

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Some Aspects of Rehabilitation

Leslie H. Truelove
B.M., M.R.C.P., D. Phys. Med.

Emphasis on the place of rehabilitation in medical care has been all too recent. Up to the time of World War II very little attention was paid to this subject in the training of medical students, and in some universities there is still a regrettable lack of emphasis on the idea of what is now called "total care" and the fact that the treatment of acute conditions in hospital is only a part of the long-term treatment of the patient. The meaning of rehabilitation is, after all, no more than the idea of doing one's professional best for the patient in the widest sense and the same therefore as the practice of good medicine. However, recent interest in rehabilitation is more than fashionable fuss and has its basis in a genuine and very considerable increase in the need for particular services.

The reasons for this increase are fourfold. Firstly, the changing pattern of medical care, for example as a result of the use of antibiotics, has resulted in more attention to long-term illness and greater possibilities of care for the aged. Techniques of treatment have greatly improved in certain specific conditions such as following amputation, in quadriplegia, paraplegia and arthritis. Finally, financial considerations are involved. Treatment of people with this sort of condition is usually lengthy and primarily of a physical nature. Beds in general hospitals are fully equipped for all forms of emergency treatment and therefore a good deal more expensive to operate than beds in hospitals where limited and specialized services are available. Furthermore, the development of techniques in treatment and the advancement of the Social Services have meant that it is no longer reasonable to expect that the individual doctor should be able to organize personally all the services now available or to keep himself completely familiar with all the most recent advances in techniques for improving physical function. As a result of this demand the specialty of Rehabilitation Medicine has come into being, but, whereas other medical specialties are concerned with groups of diseases or parts of the body, the specialty of Rehabilitation Medicine is concerned with the restoration of function and is particularly associated with the treatment of conditions affecting the locomotor system.

Many professions may be concerned in the rehabilitation of an individual even during the phase of medical treatment. Prominent amongst these are the physiotherapists, occupational therapists, speech therapists, social workers and vocational guidance councillors. The profession of physiotherapy has grown up with the development of the medical profession and has had its dark ages of

Abstract of address given to The College of General Practice of Canada, Manitoba Chapter, on Tuesday, May 2, 1961.

massage and cautery, just as medicine itself suffered for long from the cults of bleeding and purging. The modern aim of physiotherapy is to teach the patient how he may regain co-ordinated and effective movement with the use of exercise. The physiotherapist uses various aids, both mechanical and electrical, to achieve this end and in addition is familiar with other specialized techniques of treatment, for example the use of the effects of ultra-violet light or ultrasonic radiation. The training of a physiotherapist most commonly takes three years and involves a detailed study of basic subjects including anatomy, physiology, psychology, and electronic physics as well as clinical practice and the study of the techniques of the profession. When trained, the physiotherapist has a rigid code of ethical behaviour comparable with that maintained by the medical profession. Prominent amongst the rules of conduct is the principle that a physiotherapist will work only under medical direction and will treat only patients referred by a doctor.

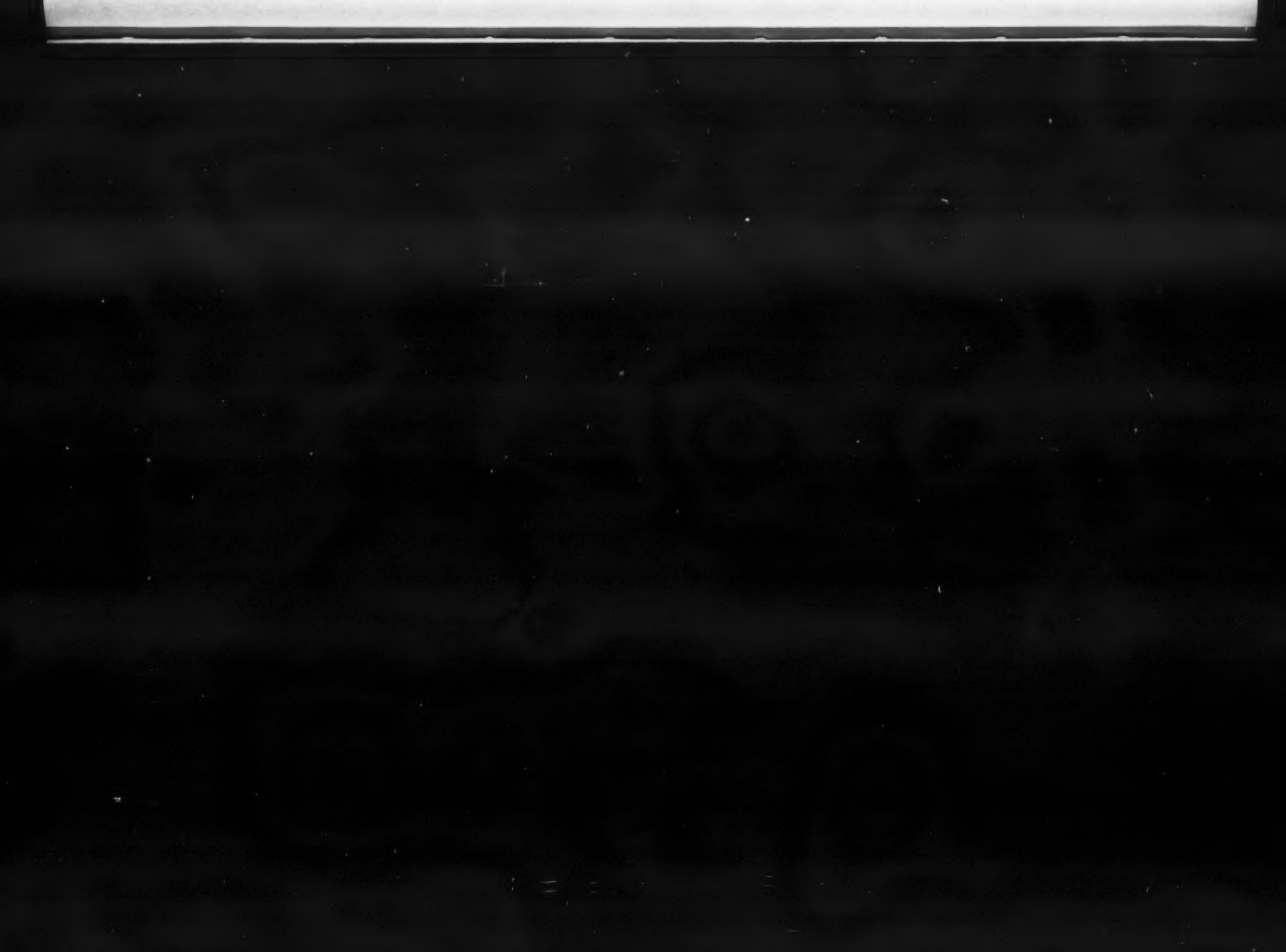
The professional status and basic training of the occupational therapist are strictly comparable with those of the physiotherapist. The occupational therapist uses activity as the physiotherapist uses exercise. This activity is sometimes creative in nature but may be in the form of manual work, of games, or of the retraining of actions which are normally part of daily life such as dressing or washing. This may involve the provision of mechanical devices or supportive splints. The principle of the use of activity for a therapeutic purpose is fundamental to all treatment given by an occupational therapist but the profession has its two main subdivisions into the psychiatric and physical fields. Creative work and activities performed in a group have a particular part in the psychiatric field. Occupational therapists have, in their training, a somewhat greater emphasis on psychiatric experience than do physiotherapists. Their code of ethics is comparable and again they work only under medical direction.

Rehabilitation centres of one sort or another have developed at the same time as the need for the services of Rehabilitation Medicine and the growth of the various associated professions. These centres have taken various forms and many of them have developed in a specialized way in response to the requirements of a particular group of patients, for instance the Armed Forces, the miners, or the Workmen's Compensation Board. The Manitoba Rehabilitation Hospital is at present being constructed as an attempt to satisfy the ever growing need for the services of Rehabilitation Medicine as a whole, in its various fields. The hospital will have 156 beds for in-patients and large physiotherapy and occupational therapy departments. These are designed to accommodate some 200 out-patients daily in addition to the treatment of in-patients. Other specialized facilities will include brace making and fitting and training in the use of prosthetic devices. Accepting the principle that Rehabilitation Medicine is an integral part of medical practice as a whole, the Rehabilitation Hospital is being built in close proximity to other hospitals of a general nature and to the Medical College of The University of Manitoba. The School of Physiotherapy and Occupational Therapy of the University will be housed in the hospital.

The hospital will be open to all patients who can benefit from the facilities for treatment which will be available and for this reason the variety of conditions treated will be somewhat greater than is often the case in Rehabilitation Centres. The special facilities for treatment are mainly physical in nature and the hospital will therefore have a staff of specialists in Physical Medicine who will consult with the referring physician regarding the programme of treatment to be undertaken. It is anticipated that the majority of patients will have recovered from the acute phase of their illness by the time they are transferred to the hospital and consequently facilities for the investigation and treatment of acutely ill patients will be limited. On the other hand, the hospital is not designed for those requiring long-term care and the average length of stay is expected to be in the region of eight weeks. Certain special facilities will be available such as electromyography, radiology specialized for the investigation of abnormalities of the locomotor system and specialized techniques of speech therapy.

The patients most likely to benefit from the facilities available in the Manitoba Rehabilitation Hospital will be those with impaired function of the locomotor system, of which the most frequent are those who suffer from the effects of a stroke, the results of injury and arthritis. There are other groups of cases, numerically smaller, such as paraplegics, amputees, patients suffering from various neurological disorders and certain cardiac or respiratory cripples who can benefit from a course of treatment of a physical nature. The hospital will contain facilities for clinical research.

The aims of good treatment can best be achieved by full co-operation with doctors referring cases to the hospital. There is always a danger when specialized services are involved that those concerned in the administration of the individual services may lose sight of the overall plan of treatment. The treatment itself is, after all, only a phase in the social rehabilitation of the patient. Social workers have an important part to play in the co-ordination of services but it is the patient's own physician who knows him best and is best able to judge the aims and effects of treatment in relation to such factors as family, background and employment. The hospital will therefore have an important function as a centre where family doctors can readily arrange the co-operation of the various agencies and facilities needed in the individual case.



ANNUAL MEETING

(Canadian Medical Association, Manitoba Division)

Manitoba Medical Association

October 10th, 11th, 12th, 13th, 1961

Royal Alexandra Hotel, Winnipeg

TENTATIVE PROGRAM

Guest Speakers

Dr. R. V. Christie, Professor of Medicine and Chairman of the Department of Medicine, McGill University, Physician-in-Chief of Royal Victoria Hospital, Montreal.

Dr. R. A. Deterling, Surgeon-in-Chief, Pratt Diagnostic Clinic, New England Center Hospital, Boston, Massachusetts.

Dr. G. W. Halpenny, President, Canadian Medical Association, Montreal.

Hon. Geo. Johnson, M.D., Minister of Health and Public Welfare, Province of Manitoba.

Dr. Ancel Keys, Director of Laboratory and Physiological Hygiene, University of Minnesota, Minneapolis.

Dr. E. H. Rynearson, Professor of Medicine, Mayo Foundation for Medical Education and Research, Medical Graduate School, University of Minnesota, Rochester, Minn.

Dr. F. M. Woolhouse, Director, Reparative and Traumatic Unit, Montreal General Hospital, Montreal.

Tuesday, October 10th

Morning

Health Officers Section,
Manitoba Public Health Association.

Evening

6.00 President's Dinner — Vice Regal Suite.
8.00 Executive Committee.

Wednesday, October 11th

Crystal Ballroom

Morning

8.30 Film.

8.55 Welcome — Dr. H. L. McNicol, President of the Association.

9.00 Toxaemia in Pregnancy, Dr. C. R. Bradford.

9.30 Self-Administered Analgesia, Dr. A. A. Earn.

10.00 Genetics, Dr. I. A. Uchida, Ph.D.

10.30 Intermission — Visit the Exhibits.

11.00 The Risk of Coronary Heart Disease, Dr. Ancel Keys.

Noon

12.15 Luncheon.
Guest Speaker: Dr. G. W. Halpenny, President, Canadian Medical Association.

Afternoon

2.00 The Management of Peripheral Occlusive Disease, Dr. R. A. Deterling.

2.30 Respiratory Resuscitation, Dr. R. V. Christie.

3.00 Intermission — Visit the Exhibits.

3.15 Recent Advances in Cerebral Vascular Disease — Panel, Chairman: Dr. N. C. Hill.

Evening

8.00 Sectional Meetings.

Thursday, October 12th

Crystal Ballroom

Morning

8.30 Film.

9.00 Gastro-duodenal Ulcer,
Dr. R. A. Lim.

9.30 Some Aspects of Oesophageal Disease,
Dr. J. F. Lind.

10.00 Intermission — Visit the Exhibits.

10.30 Are Respiratory Function Tests Worthwhile?
Dr. R. V. Christie.

11.00 Carcinoma of the Lung,
Dr. R. A. Deterling.

11.30 The Patient Who is Dying of Cancer,
Dr. E. H. Rynearson.

Noon

12.15 Luncheon.
Guest Speaker: Hon. Geo. Johnson,
Minister of Health and Public Welfare,
Province of Manitoba.

Afternoon

2.00 The Doctor, The Patient, and Prepayment — Symposium.
Moderator:
Dr. L. R. Rabson, Chairman,
M.M.A.Economics Committee.
Members:
Dr. G. E. Wodehouse,
C.M.A. Economics Committee; Chairman Executive Sub-Committee on Health Services; Honorary Treasurer C.M.A.
Mr. B. E. Freamo, Assistant Secretary (Economics), C.M.A.
Dr. K. R. Trueman, First Vice-President, M.M.A.
Dr. R. L. Cooke,
M.M.A. Economics Committee.
Dr. J. C. MacMaster, M.M.A. Economics Committee and Executive Director M.M.S.

3.00 Annual Business Session — Members only.
Reports of Committees.

Evening

8.00 Annual Business Session — Continued.
Report of Nominating Committee.
Presidential Address.
Economic Matters.

Friday, October 13th

Crystal Ballroom

Morning

8.30 Film.

9.00 Chest Trauma,
Dr. S. K. Kay.

9.30 Surgical Management of Deafness—
A Review of Recent Developments,
Dr. C. I. Woolf.

10.00 Dermatology Problems,
Dr. A. R. Birt.

10.30 Intermission — Visit the Exhibits.

11.00 Haemangiomata and their Management,
Dr. F. M. Woolhouse.

11.30 Which Goiters are Best Treated with Surgery and Which with Radioactive Iodine?
Dr. E. H. Rynearson.

Afternoon

2.00 Facial Injuries Sustained in Automobile Accidents,
Dr. F. M. Woolhouse.

2.30 Oral Poliomyelitis Vaccine,
Dr. W. L. Parker.

3.00 Intermission — Visit the Exhibits.

3.15 Respiratory Problems in the Post-operative Period and their Management — Panel.
Chairman: Dr. D. P. Snidal.

Evening

6.30 Reception — Tea Lounge.

7.15 Dinner — Alexandra Room.

9.00 Dancing — Crystal Ballroom.

Medical History

Samuel Willis Prowse

Ross Mitchell, M.D.

Manitoba Medical School has been fortunate in its deans. Each possessed qualities particularly fitted to the needs of the institution. James Kerr, the reluctant founder, insisted on two principles in advance of the actual teaching, one, that the school should be the work of the established practitioners, the other that it should be under the aegis of the university. This ensured proper standards both for entrance and throughout the course. He laid the foundation well, but unfortunately four years later ill health compelled him to seek a milder climate. James Wilford Good, his successor, was aggressive, colorful and forward looking. He was the first in the province to specialize and in later years the first to own and employ radium in his practice soon after its introduction. Henry Havelock Chown, the third dean, was a medical statesman whose first interest was the welfare of the school. He introduced the first full-time professor of anatomy, Dr. E. J. Evatt, and the first full-time professor of pathology, Dr. William Boyd. He arranged for the transfer of the school clear of debt as a going concern to the university. Its assets at that time, 1917, were valued at $250,000. He also arranged that his successor should be Dr. S. W. Prowse, then commanding a medical unit in France.

This transfer came at a time of turmoil both in world affairs and in medical education. The first world war 1914-1918, caused a crisis in the school already shaken by the impact of the Flexner report of 1910. Many teachers and students enlisted, and the need of the armed forces for more medical officers threw an extra strain on the faculty. However, this was a small thing compared with the potential of trouble released by the Flexner report.

It is necessary here to mention how that report came about and its effect on medical education in the United States and Canada.

The American Medical Association, established in 1847 largely because of dissatisfaction with medical teaching, was re-organized in 1901 by bringing all local and state medical societies into an organic unit as constituent parts of the A.M.A. In 1904 the American Medical Association set up a Council for Medical Education. Resentment of the Council's criticisms of low grade medical schools led the Council in December 1908, to invite the Carnegie Foundation for the Advancement of Teaching to make a survey of medical education in the United States and Canada. Dr. H. S. Pritchett, President of the Foundation, accepted the invitation and Abraham Flexner, the secretary, was commissioned to make the study. He visited all the medical schools and his report was published in 1910. It proved to be a bombshell. In 1904 there were 160 medical schools in the United States and Canada, the rest of the world had 154. Dr. Flexner found that many schools on this continent had very low standards of entrance, little clinical teaching and almost no equipment. Some were only diploma mills. The report recommended that medical schools should become an integral part of a university subject to its discipline and standards of education.

Despite their anguished protests many schools were forced to close their doors. In 1916 the number of medical schoools had fallen to 95. The first inspection of Manitoba Medical College by an official of the Carnegie Foundation resulted in the school being graded Class A, as at that time the faculty and equipment were equal to those of a majority of American medical schools. In 1913 the school was inspected by Dr. Colwell of the Council on Medical Education of the American Medical Association. He found that the reorganization of the school into a medical faculty of the university had not been accomplished and the school lost its Class A rating. By 1917, the reorganization had been affected, but owing to the war university grants were small and the upgrading of the school was not reached. In 1920 welcome relief came when the Rockefeller Foundation, organized by John D. Rockefeller, Senior, gave $500,000 to the University of Manitoba on condition that medical buildings be erected to cost not less than $400,000 and that the revenue of the medical school should be increased by $20,000 annually in addition to the revenue from the Rockefeller endowment.

This beneficent gift enabled the physiology building to be built in 1921 and the pathology building in 1922. The facade of the latter bears the names of men great in medical history: Hippocrates, Harvey, Hunter, Jenner, Morton, Virchow, Pasteur, Lister, Metchnikoff. They reveal the historical mind of Dr. Prowse. Another evidence of the bent of his mind was shown in 1922 when he was able to write to Dr. Colwell of the Council on Medical Education that twenty-one research problems had been completed in various departments of the school, that 23 were on hand, and 10 more were contemplated.

On November 5, 1923, word came from Dr. Colwell that our school had again attained Class A standing. A complimentary banquet was tendered by the Faculty and Alumni of the Faculty of Medicine to Dean S. W. Prowse in the Fort Garry Hotel on January 15, 1924. It was a joyous occasion. Dr. E. W. Montgomery, the chairman, read an address and Dr. H. H. Chown proposed the toast to "Our Guest The Dean and Medical School." The Dean's reply was eloquent. After giving the history of the

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school's struggle to re-organize and to achieve Class A rating he closed with an eloquent tribute to the need for physicians to keep qualities of heart as well as of science.

"I have heard Doctor Blanchard"—who had been Lister's dresser in Edinburgh—"describe how the eye of every conscious patient in the ward would kindle at the entrance of Joseph Lister; and most of us can recall occasions when a draught of the milk of human kindness has proven of greater therapeutic value than a vaccine."

These were not empty words, they were a part of the man himself. Those who were privileged to know him recall instances of kindness, gentleness and thoughtfulness in one whose training and scientific bent of mind placed him in the forefront of medicine.

He came to Manitoba from Prince Edward Island via Edinburgh Medical School. His grandfather, William Prowse, came to "The Island" from Devonshire, his father Samuel was a merchant who sat in the provincial legislature and became a member of the Dominion Senate. Willis was born in 1869 at Murray Harbour, he graduated B.A. from Mount Allison College in New Brunswick, in 1889, then went to Edinburgh where he graduated M.C., Ch.B. in 1893, M.D. in 1896, F.R.C.S. Ed. in 1898. For four years he practised at Colinsburgh, Fifeshire, then moved to Winnipeg in 1898. For a year he did general practice, then specialized in diseases of the eye, ear, nose and throat. In 1902 he became a member of the faculty of Manitoba Medical College, lecturing in physiology in succession to Dr. E. W. Montgomery. The writer had the privilege of acting as student assistant in that year and making drawings and muscle-nerve preparations under his direction.

Fourteen years later when Dr. Prowse was Professor of Oto-Laryngology, he was invited to take command of No. 4 Canadian Casualty Clearing Station, which had been offered by the medical school. He accepted the command. Officers under him were other members of the faculty: Majors F. T. Cadham and W. W. Musgrove, Captains T. O. Todd, James Pullar, D. F. McIntyre, Ross Mitchell. The personnel contained several students: E. R. Cunningham, C. W. Duncan, H. E. Popham, David McKeague and H. D. Benwell, all of whom later were released from the unit in order to complete their medical course.

The unit was rapidly recruited and in June 1916 it marched from the Medical College to board a C.P.R. train. Snapshots taken at the station show Dr. Chown talking earnestly to Dr. Prowse possibly on College policy. The high hopes that No. 4 C.C.S. would go over to France with the 4th Canadian Division were dashed when its members were sent from Bramshott to various medical hospitals in England. Only Lt.-Col. Prowse and his faithful batman were left as the nucleus of No. 4 C.C.S.

June 16, 1916

At C.P.R. Station — Capt. Pullar, Capt. Todd, Dr. Chown, Lieut.-Col. Prowse

Throughout the coldest winter in twenty years he stayed in a tent on St. Martin's plains but in the spring of 1917 the unit was re-assembled to open the Princess Patricia Canadian Red Cross hospital in a boys' school at Ramsgate. After a few weeks there, the 4 C.C.S. was sent to France and it was near St. Omer that Lt.-Col. Prowse said goodbye to the unit and returned to Canada to be dean of Manitoba Medical School.

As officer commanding he worked for the good of the unit. He assembled a fine group of nurses and was able to turn over a smoothly running hospital to his successor, another Winnipeger, Lt.-Col. Spurgeon Campbell. Though he always did his duty, he abhorred the rough side of war. On one occasion when a private in the unit was sentenced by court martial to be paraded before the whole unit for reprimand he delegated that duty to the adjutant, as the task was repugnant to him. He was interested in the history of the American civil war especially in Stonewall Jackson, the Confederate leader and mystic.

The inclement weather of St. Martin's Plain impaired his health. He suffered from bronchitis and migraine, later from angina. He died of coronary occlusion on August 1, 1931 after serving fourteen years as Dean of the Faculty of Medicine of the University of Manitoba. A year before his death the University conferred on him the honorary Doctorate of Laws in company with other distinguished British and Canadian physicians when

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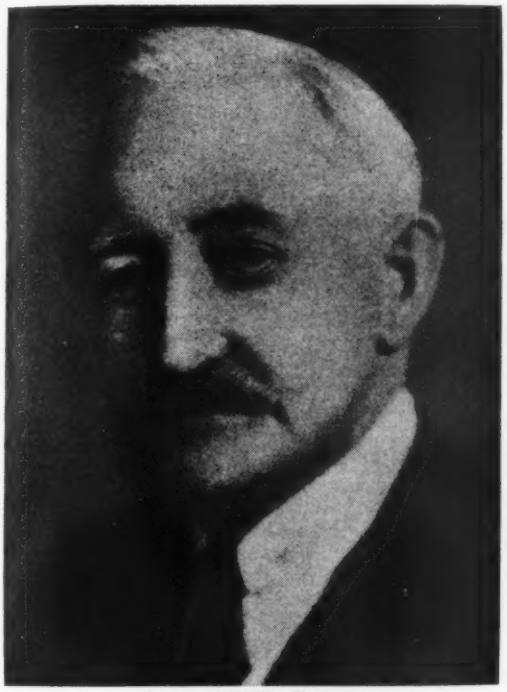

Samuel Willis Prowse

the British and Canadian Medical Associations held a joint meeting in Winnipeg.

At his passing the president of the University of Manitoba wrote that the annals of medical education would perpetuate his memory and Dr. W. Harvey Smith, President of the British Medical Association and the Canadian Medical Association, a long time friend, wrote thus:

"The momentum which he imparted to medical education in the west will long endure and the spirit of fraternity and of good will which he inspired will stand as a lasting monument to his name and fame."

After his death the Prowse Prize for Clinical Research in Medicine was set up. It consists of a bronze medal and $200.00 to be awarded for the best piece of clinical research submitted each year. It is open to students of the fourth and fifth years in medicine and to graduates of not more than ten years with rank no higher than lecturer. As set forth on the tablet in the Physiology Lecture theatre, the holders of the Prowse Prize have been:

1931 — Meltzer, Herbert
1933 — Medovy, Harry
1934 — Walton, C. H. A.
1935 — Unkauf, Byron M.
1936 — Schultz, Stewart D.
1938 — Campbell, Murray H.
1939 — Coke, Lawrence
1940 — Dubo, Sara
1942 — Penner, D. W.
1946 — Beamish, R. E.
1948 — Cosgrove, James B. R.
1949 — Houston, A. B.
1950 — Cherniack, Reuben
1951 — Cera, Leslie Jerome
1952 — Zingg, Walter
1953 — Irwin, R. W.
1955 — Moorhouse, J. A.
1956 — Snidal, D. P.
1957 — Krisman, A. M.
1958 — Kaufman, B. J.
1959 — Naimark, A.

The future careers of these winners of the Prowse Prize justify the faith of those who instituted the award.

Could the shade of Dr. Prowse re-visit the scene of his labours he would rejoice at the title of an article in the Manitoba Medical Review, 41, 289, May 1961, entitled "Winnipeg—A Medical Research Centre." This was what he strove for.

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Editorial

S. Vaisrub, M.D., M.R.C.P. (Lond.), F.R.C.P. (C.), F.A.C.P., Editor

Synthetic Prosthetics

Of all the unsung heroes of Therapeusis none are more neglected than the inventors of prosthetic devices. The names of Jenner, Withering, Pasteur and Ehrlich are readily called forth by our grateful memories whenever we use the therapeutic products of their creation, but where in hallowed memory are the names of those who bequeathed us the artificial leg or the artificial hand? Paeans of praise for the pioneer of penicillin, but no beating of drums for the designer of dentures.

This callous lack of grateful recognition is most deplorable, for none are more deserving of appreciation than these half-forgotten, oft anonymous benefactors of suffering humanity. Anyone of the thousands who shared with the writer of these lines the shattering experience of gazing at the reflection in the mirror of his mouth recently rendered edentulous with but two remaining canines standing guard over the dark dungeon of the oral cavity, must feel an overwhelming sense of gratitude to the unremembered Phoenician who many centuries ago wrought the device that now helps the dental cripple in his hour of need.

It is not implied, of course, that the sole or even the main function of a dental prosthesis is cosmetic. Dentures are not "falsies" intended to create an illusion in the eye of an observer who is not likely to come to grips with reality. They are primarily aids to mastication. Their function is utilitarian as well as aesthetic, as are the functions of many other artificial aids aimed at pleasing the eye as well as filling a need. Not unlike the imposing products of "functional" architecture, modern prosthesis is often a happy blend of the artistic and the practical.

Beauty, however, is "only skin deep." Its demands stop at the epidermis and apply only to external prostheses visible to the probing eye. It is of no consequence to the internal prosthetic devices securely shielded by the sheltering skin. Hence, the surgeon concerned with internal prostheses need not be distracted by cosmetic or esthetic considerations. Nor does he need to seek the advice of the artist and the craftsman. He need only concentrate on function. Rather than fret about appearance, he now must worry about substance — and substance in this case is more than a figure of speech, for the substances used in the preparation of prostheses must possess properties which ensure proper functioning and durability. Whether it be a vitallium cup in the hip or a teflon graft in the aorta, the quality of the substance used is almost as important for the success of the operation, as is the skill of the surgeon, who of necessity must be an expert on plastics and a connoisseur of metals, a friend of the engineer and the industrial chemist.

We take pride and pleasure in publishing in this issue several articles dealing with prostheses in Orthopedics and Cardiovascular Surgery—fields in which these devices are being used with increasing frequency and efficacy.

We are less than happy about the exclusion from this issue of such lifesaving devices as the artificial kidney and the iron lung. This omission is not due to an editorial oversight, but to the whims of the dictionary which refuses to recognize these valuable extracorporeal aids as bona fide prostheses. Lacking in permanence and in genuine resemblance to the organs which they substitute, these temporary replacements, apparently, do not qualify. We hasten to add that our sympathies do not lie with the snobbery of the lexicographers, for ours is a deep respect for these precious paraprosthetic inventions. On the other hand we do not share the sanguine view (J. D. Bernal, The World, the Flesh and the Devil) that substitutes and attachments will eventually replace our vital organs and our frail frame. We still are of the opinion that there is nothing like a vital organ and most certainly "nothing like a fair frame."

The Annual Meeting

Although the electronic brain is not an artificial organ or anything even remotely resembling a prosthesis, it may serve as a model for such a remote future possibility of an artificial cerebrum, or, for the present, as a springboard for high dives into limpid waters of wishful thought. How pleasant, indeed, it would be to relax and have the brain prosthesis (brainture? brainette? cerebrator?) do a spot of thinking for one—real thinking that is, not just lightning computations, electrocardiographic interpretations, or differential diagnoses and similar tasks which can be readily performed by electronic computers now in existence. How wonderful to just turn the right knob and fall asleep serenely confident that the "cerebrator" will take care of those unfinished letters, unrehearsed speech, and unwritten articles.

Wishful thinking? Idle fancies? Perhaps. But is it too fantastic to suppose that a machine capable of predicting elections, meteorologic phenomena, and stock market fluctuations, could, if perfected, produce an erudite editorial?

A simple task to begin with might be an editorial welcoming an Annual Meeting. Here no depth of thought is required, no originality expected. A few relevant data programmed into the computer should elicit the correct electronically processed comment.

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It is with this happy thought in mind that we proceeded to study the program of The 1961 Annual Meeting. At first glance we were delighted to find the titles of the presentations to be concise, descriptive and informative—ideally suited for programming a well constructed computer. A second look at the scientific agenda, however, shattered our dreams completely, for we have now become aware of unsurmountable difficulties in coding and decoding that would confront our mechanical brain. Will the machine code I. A. Uchida's paper on "Genetics" under Biology, Pediatrics or Histology? Will it store A. Keys' article on "The Risk of Coronary Heart Disease" under Actuarial Statistics or Cardiology? Will it classify E. H. Rynearson's "What to Tell the Patient with Carcinoma" under Psychiatry or Moral Philosophy? Will it pigeon hole the "Symposium on Medical Care in Manitoba" into Economics, Sociology or Politics?

Such are the frustrating problems to be faced by the mechanical brain.

It, thus, became obvious that the electronic brain would have to refer these perplexities back to our protoplasmic intracranial computer, much to our chagrin. The reason for this is not to be found in the superiority of the organic over the inorganic, but rather in the complexity, diversity and novelty of our Annual Meetings. No two Annual Meetings of the M.M.A. are alike. There are always new faces, new topics, new problems, new solutions, and, of course old charm of old places and old friends.

Remember the date, October 10th, 11th 12th and 13th.

Ed.

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Book Reviews

The Cardiac Arrhythmias. Branden Phibbs, C. V. Mosby Co., 128 pp. $7.50.

This book subtitled "a guide for the general practitioner" is a successful exercise in simplification. In fact, it is so successful that one wonders why no one attempted this before. The author departs from the usual assumption that the electrocardiogram is for the specialist while the general practitioner should confine himself to "bedside" diagnosis. This is all well and good for cases where a leisurely approach is possible. In the life threatening situations posed by some cardiac arrhythmias there may not be time for consultations. Hence, it is important for all physicians to learn how to interpret electrocardiographic records of disordered cardiac rhythm. With this end in view the author proceeds to guide the untutored novice through the maze of electrocardiographic diagnosis. How does he do it? Simply by avoiding all references to abstruse principles of electrophysiology, vectors, gradients, axes, currents of injury, etc. . . . and by concentrating solely on graphic representations of the arrhythmias, he teaches electrocardiographic interpretations as one would teach the steps of a rhythmic dance. A dancer need not know the biochemical and mechanical principles underlying the movements of his legs. All he is concerned with is sequence and timing.

In addition to clarifying electrocardiographic interpretation the author has succeeded in conveying to the reader much useful clinical information in relation to bedside diagnosis and treatment, he has even included a chapter on operating room emergencies.

A very useful aid to the general practitioner.

S. V.

☆

Cancer Prognosis Manual. Arthur G. James, M.D., F.A.C.S, Ohio State University Medical Center, Columbus, Ohio.

The American Cancer Society has recently distributed the "Cancer Prognosis Manual" by Arthur G. James, M.D., F.A.C.S. of Ohio State University Medical Center, Columbus, Ohio. This is a new and useful manual giving many data on five and ten year survivals of patients with a variety of cancers.

The best one can do to tell you about this unusual publication is to quote the "Foreword" contributed by Professor Warren H. Cole, M.D.

"Physicians as a whole, and too many surgeons, are inadequately informed concerning the prognosis of various types of malignant tumors. Some tumors respond very satisfactorily to correct therapy, whereas a few are associated with a very low 5-year survival rate in spite of the proper application of the optimum methods of therapy known today. The physician should be correctly informed concerning the probability of eradication of the disease following proper therapy, because the patient, or at least the patient's relatives, should be informed of the expected result.

The methods used in reporting cancer end results have been so varied that it is often impossible for even the most discriminative to compare statistics of articles dealing with the same disease. In this Manual the author offers a uniform method of reporting, which should obviate some of this difficulty. He also advocates a uniform classification, which should help to further simplify the process of end result reporting.

The Manual provides a summary of his review of a great number of publications dealing with results and prognosis. These references are listed after each tumor considered, and thus allows the reader to refer to the various publications for more detailed information. Since the material was obtained from articles published between 1953 through 1957, the data can be considered up to date.

This Manual should prove to be of inestimable value for the medical student, busy practitioner, and teaching staffs, and is to be recommended for general use."

R. L. C.

☆

Management of Obstetrical Difficulties: Willson, J. R., 6th edition. The C. V. Mosby Company, St. Louis, 1961, pp. 687, $16.50.

The first edition appeared in 1937. That a sixth edition has been called for is evidence of the usefulness of this work to practising obstetricians, evidence also, that obstetrics is a progressive science. The writing is crisp, practical and up to date reflecting the teaching of the head of the department of obstetrics and gynecology of Temple University of Medicine in Philadelphia.

Newer points discussed are the management of habitual abortion, particularly those resulting from incompetence of the cervical os and the operation therefor, the use of antibiotics and chemotherapeutic drugs, diuretic and hypotensive agents, the management of complications such as diabetes and prediabetes, essential hypertension and pre-eclampsia. Diagnostic procedures such as fetal electrocardiography, the fern test on cervical mucus, the salt overload test in toxaemia are evaluated, and the emotional problems of reproduction are not forgotten. The teaching may be summed up in the words: safe and sane.

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The text is well illustrated with photographs, reproductions of x-ray films, line and half-tone drawings. The operations described are depicted in successive steps. Stress is laid on the value of regional and local anaesthesia, especially pudendal block.

The section on the newborn infant is by Victor C. Vaughan III and William Laupus of the department of pediatrics, Medical College of Georgia. It reflects the recent emphasis placed on perinatal problems, especially the respiratory distress syndrome (hyaline membrane) and erythroblastosis foetalis. The authors mention that Chown and Bowman of Manitoba are pleased with a program of induction of labor at 33 to 34 weeks in mothers with a bad prognosis for the baby.

The format of the book is pleasing and reflects credit on the publishers. The book is heartily recommended to all who practice obstetrics.

R. B. M.

☆

Management of Hypertensive Diseases. Joseph C. Edwards, A.B., M.D., F.A.C.P., F.A.C.C., Assistant Professor of Clinical Medicine, Washington University School of Medicine, St. Louis, Mo. The C. V. Mosley Co., St. Louis, pp. 429. Price $15.00.

Beautifully produced, well illustrated, well indexed, well bound, eloquently introduced by Paul Dudley White and Thomas Findlay, "strongly recommended" by the reviewer of the Lancet as one which is "a pleasure to have"—this book, as far as this reviewer is concerned, is no pleasure to review, no pleasure at all.

It is not easy to see why a text on management of hypertension should devote 20 pages to electrocardiography, five pages to the uses of digitalis (including a two-page comparative chart of its various preparations), numerous paragraphs to animal experimentation and to other relatively irrelevant subjects. It is no less difficult to understand why a book ostensibly written as a guide to the "busy physician in practice" should contain more than 1,600 references. It is hard to explain why these references are permitted to dominate the text rather than support and supplement it. Indeed, the whole book is built around these references which are not only the skeleton of its body, but its flesh and lifeblood. Many pages are nothing more than vast aggregates of loosely jointed abstracts of various articles with hardly any attempt at assessment, evaluation or expression of a guiding opinion. There is throughout a deplorable lack of emphasis, cohesion, organization and elegance of style.

So much for brickbats. Now some bouquets are in order. This book is a result of a great deal of painstaking work. Its raw materials—the numerous authoritative references—are up to date (1960), and will serve as valuable guides to the student and the worker in this field. The information given about drugs is detailed and accurate. The case reports (there are over 40 of them) are well presented and illustrated. In fact, whenever the author manages to extricate himself from the morass of quotations, abstracts and excerpts, he succeeds, in conveying to the reader the essentials of the problem of hypertension and its management.

S. V.

Obituaries

Dr. Alva Burton Chapman

Manitoba's oldest physician, Dr. Alva Burton Chapman, died on May 12th at Reston, following two days illness. Had he lived till June 27th he would have been 98. Born near Gananoque, Ont., he graduated in medicine from Queen's University and came to practice at Reston in 1900. In 1915, though over-age, he enlisted as a Captain, was wounded at Vimy and received the Military Cross. His first wife died in 1938, he remarried in 1954 and is survived by his widow.

He played an active part in the life of the community, serving on Boards of the School, Parks, Church and Agricultural Society.

☆

Dr. George Hickling Evoy

Dr. George Hickling Evoy, 57, died suddenly on May 31, 1961. Born in Rapid City, Manitoba, he graduated from the Faculty of Medicine, University of Manitoba in 1929. In the 2nd World War he served for five years with the R.C.A.M.C. in Italy, France and Germany, and later was Senior Medical Officer of 108 Manning Depot. For the last two years he was Physician at Deer Lodge Military Hospital. He is survived by his wife, a son and daughter. Burial was with full military honors.

☆

Dr. John Jamieson Leishman

Dr. John Jamieson Leishman, 53, a 1934 graduate in medicine, from the University of Manitoba. Died in Fort Frances on June 10, 1961, after a sudden illness. After graduation he practised briefly at Hamiota and Oak River before moving to Fort Frances in 1938, where he played an active part in the life of the community.

Toxic Effects of Thallium

In June, one patient was seen in the Poison Centre following the ingestion of an ant poison containing thallium sulphate. The patient suffered no untoward effects. Since we are approaching the season of insects and, therefore, of insecticides, it would not be out of place to review briefly the effects of poisoning due to thallium salts.

Thallium has a notorious record as a poison. It has been used as a means of suicide and homicide, and is occasionally the poison of choice of murderers in detective stories[1]. Its chief legitimate use as a poison is in the elimination of rodents and insects. It was at one time used in the cosmetic industry as a depilatory, but this use has now been abandoned.

Thallium is readily absorbed through the skin and mucosa of the alimentary tract. It is distributed to all tissues, is toxic to all cells, and has a cumulative effect. Like lead, it may accumulate in the skin and hair, but unlike lead, it is not deposited in the bones.

Symptoms of acute poisoning develop slowly and sometimes take up to two days to appear. Nausea, vomiting, abdominal pain and diarrhoea are accompanied by ulcerative stomatitis, a metallic taste, skin eruptions and oedema about the face. Loss of hair may occur any time within the first two weeks following ingestion. Paraesthesia of the extremities, muscle weakness, delirium, convulsions, coma and death may occur. The patient who does not succumb may be left with ataxia, blindness, ocular palsies, psychosis, peripheral neuritis and permanent kidney damage.

There is no specific treatment for thallium poisoning. Iodides, sodium thiosulphate, calcium and dimercaprol have all been used with little or no benefit. Symptomatic and supportive treatment must be given, but the treatment par excellence is prophylaxis, and physicians are urged to do all in their power to educate the parents of young children in the wise handling of this most dangerous chemical.

Reference

1. Ngaio Marsh: "The Last Curtain."

Poison Control Centre, June, 1961

Drugs for Internal Use	Toxic Content	No.	Disposal
Aspirin	Salicylate	12	4 L/A 7 L/H 1 H
Hydrodiuril	Hydrochlorothiazide	1	1 L/H
Phenobarbital	Barbiturate	2	2 L/H
Phenobarbital Tablets	?	1	1 L/H
Ex-Lax	Phenolphthalein	1	1 H
Cough Medicine	?	1	1 H
Cough Syrup	?	1	1 L/H
Polaramine Cough Syrup	Dextro-Chlorpheniramine Maleate	1	1 L/H
Nerve Pills	?	1	1 L/A
Librium Pills	7-Chloro, 2-Methylamino, 5-Phenyl, 3-H1, 3-Benzodiazepine, 4-oxide-Hydrochloride	1	1 L/H
Gravols	Dimenhydrinate	1	1 H
Benylin Expectorant	Benadryl, Chloroform, Ammonium Chloride, Sodium Citrate, Alcohol	1	1 L/H
Glutaminfaure & Decontractyl	Glutamin, Sodium Phosphate, Lecithin, Mephenesin	2	2 L/H
Acotin	Phenacetin, Aspirin, Atropine	1	1 L/H
Onisul	Sulphonamide	1	1 L/H
222's	Salicylate, Phenacetin, Codeine Phosphate, Caffeine Citrate	3	3 L/H
Coricidin	Caffeine, Aspirin, Phenacetin	2	1 L/H 1 H
Stelazine	Phenothiazine Derivative	1	1 L/H
Gluco-Fedrin	Ephedrine	1	1 L/H
Drugs for External Use			
Mercurochrome	Merbromin-Dibromoxymercuri-Fluorescein Sodium	1	1 L/H
Urinary Antiseptic	?	1	1 H
Commercial Products			
Gasoline and 2,4-D	Hydrocarbon and 2,4-D	1	1 L/H
Kerosene	Hydrocarbon	1	1 L/H
Fuel Oil	Hydrocarbon	1	1 L/H
Lighter Fluid	Hydrocarbon	1	1 L/H
Turpentine	Hydrocarbon	2	1 L/H 1 H
Coal Oil	Hydrocarbon	1	1 L/H
Coal Tar	Phenol	1	1 L/H
Paint	?	1	1 L/A
Javex	Sodium Hypochlorite	3	3 L/H
Ant Poison	Thallium	1	1 L/H
Mouse Seed	Strychnine	1	1 L/H
Pink Liquid Vel	Sulphonated Hydrocarbon Derivative, Alcohol	1	1 L/H
Liquid Detergent	?	1	1 H
Pineoil	Pineoil	1	1 L/A
Moth Balls	Naphthalene	1	1 L/H
Drano	Sodium Hydroxide	2	2 L/A
Noxzema Suntan Lotion	Isobutyl, Aminobenzoate, Alcohol	2	2 H
Suntan Lotion	?	1	1 L/H
Formaldehyde	Formaldehyde	1	1 H
Unknown Substance	?	1	1 L/H
Carbon Monoxide	Carbon Monoxide	1	1 H

TOTAL POISON CALLS 63
TOTAL PHONE CALLS 61
TOTAL PATIENTS SEEN AFTER PHONE CALLS 23
TOTAL ADMISSIONS 9

CODE: L — Gastric Lavage
A — Admitted to Hospital
H — Examined and sent home

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Association Page

Royal Commission on Health Care in Canada

The terms of reference and names of the members of the Royal Commission on Health Care in Canada have now been released. The Order-in-Council setting out this information is quoted below.

The Executive recently appointed Dr. K. R. Trueman, Chairman of a committee to produce the Association's Brief to the Commission.

Members were circularized with the terms of reference on June 30th and invited to submit information and recommendations to the "Brief Committee." Your contributions should be forwarded as quickly as possible as it is expected that the Commission may commence sittings during September.

All communications concerning the Brief should be forwarded to the Association Office, 601 Medical Arts Bldg., Winnipeg 1.

An Order-in-Council Establishing a Royal Commission on Health Care

The Committee of the Privy Council have had before them a report from the Right Honourable John G. Diefenbaker submitting that, while recognizing that the power to make laws relating to health services is, except in limited fields, within the jurisdiction of Provincial Legislatures, it is considered to be in the public interest to have a comprehensive and independent study made of the needs of the Canadian people for health services and the resources available to meet such needs with a view to recommending methods of ensuring that the best possible health care is available to all Canadians.

The Committee, therefore, on the recommendation of the Prime Minister advise that:

Chief Justice E. M. Hall, Saskatoon (Chairman)
Mr. M. Wallace McCutcheon, Toronto, Ont.
Prof. O. J. Firestone, Ottawa, Ont.
Dr. C. L. Strachan, London, Ont.
Dr. Arthur F. VanWart, Fredericton, N.B.
Dr. David M. Baltzan, Saskatoon, Sask.
Miss Alice Girard, Montreal.

be appointed Commissioners under Part I of the Inquiries Act to inquire into and report upon the existing facilities and the future need for health services for the people of Canada and the resources to provide such services, and to recommend such measures, consistent with the constitutional division of legislative powers in Canada, as the Commissioners believe will ensure that the best possible health care is available to all Canadians and, in particular, without restricting the generality of the foregoing, the said Commissioners shall inquire into and report upon:

a) The existing facilities and methods for providing personal health services including prevention, diagnosis, treatment and rehabilitation.
b) Methods of improving such existing health services.
c) The correlation of any new or improved program with existing services with a view to providing improved health services.
d) The present and future requirements of personnel to provide health services.
e) Methods of providing adequate personnel with the best possible training and qualifications for such services.
f) The present physical facilities and the future requirements for the provision of adequate health services.
g) The estimated cost of health services now being rendered to Canadians, with projected costs of any changes that may be recommended for the extension of existing programs or for any new programs suggested.
h) The methods of financing health care services as presently sponsored by management, labour, professional associations, insurance companies or in any other manner.
i) The methods of financing any new or extended programs which may be recommended.
j) The relationship of existing and any recommended health care programs with medical research and the means of encouraging a high rate of scientific development in the field of medicine in Canada.
k) The feasibility and desirability of priorities in the development of health care services.
l) Such other matters as the Commissioners deem appropriate for the improvement of health services to all Canadians.

Emergency Health Organization

The first organizational meeting of the Emergency Health Organization was held in May. Along with the Association member, representatives were also present from the Associated Hospitals of Manitoba, Metro Winnipeg and the M.H.S.P. It was noted that the majority of hospitals in Metro Winnipeg have submitted civil disaster plans to the Emergency Health Services Officer.

Dr. R. W. MacNeil has been appointed M.M.A. representative to the Emergency Health Organization.

Workmen's Compensation Board

Arrangements were made with the Workmen's Compensation Board to extend the interim period concerning a 40% increase in the Workmen's Compensation Board fee schedule. The extended period is from May 15th to October 1st, 1961.

This period of extension affects all fees with the exception of the x-ray schedule which will revert to the 1956 schedule during the period May 15th to October 1st, 1961. A reminder to this effect was sent to all members under date of May 29th, 1961.

Cancer Biopsy Service

It was recently agreed that the Manitoba Cancer Treatment and Research Foundation be permitted to pay for biopsies performed in doctors' offices in Metro Winnipeg as well as in rural areas.

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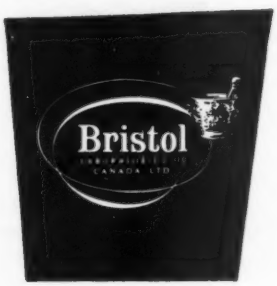


The Indiana State Police Auto Crash Injury Research was officially welcomed to the Red River Exhibition by Dr. K. R. Trueman, Vice-President of the Manitoba Medical Association. The Research exhibit under Sgt. Elmer C. Paul was sponsored at the Red River Exhibition by the Association.

Indiana State Police Auto Crash Injury Research

This exhibit under the sponsorship of the Association created a great deal of interest at the recent Red River Exhibition. The booth was staffed by two Indiana State Troopers, Sgt. Elmer C. Paul and Sgt. Gerry Howard, who are both well experienced in the field of accident safety.

Due to the efforts of Sgt. Paul, the originator of the Auto Crash Injury Research, automobile manufacturers now include such safety features as the deep dish steering wheel, padded dash board, pop-out windshields and in 1962 will have as standard equipment, seat belt attachments.

The suggestion to have the Auto Crash Injury Research brought to Winnipeg arose with the Committee on Medical Aspects of Traffic Accidents. The Committee's activities have brought them in close touch with this subject and it was decided that Manitobans should be made more aware of the toll that automobile accidents take in lives lost and crippling injuries. In 1960 there were 12,940 automobile accidents in Manitoba; 4,713 persons were injured and 122 persons killed.

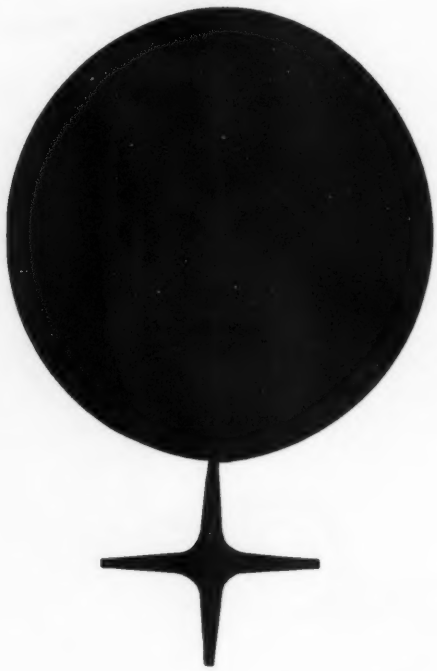
The Indiana State Police exhibit is nationally known and recognized as an authority in the field of public education on traffic safety. Sgt. Paul indicated that they do not endeavor to prevent accidents as there are too many complicating factors to cope with but they do attempt to educate people in the proper use of safety equipment and thus reduce death and injuries caused by the accident. The auto crash studies that have been undertaken by the project during the past 12 years definitely show that death and injury are reduced by the use of safety equipment, particularly the auto seat belt.

The safety story told by the many real life photographs contained in the exhibit and the automobile equipped with all safety features attracted many thousands of Red River Exhibition visitors.

Approximately 10,000 pieces of literature were distributed from the booth and in addition good publicity was received by articles in the newspapers plus TV appearances by Sgts. Paul and Howard at both Winnipeg television stations.

The members of the Committee on the Medical Aspects of Traffic Accidents alternated at being present at the booth for a period each day.

The results were very gratifying and in addition to the public interest the exhibit created, it is a pleasure to note that the booth was awarded a blue ribbon for placing second in the judging of general exhibits.



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Constitution, By-Laws and Considered Decisions Notice of Motion

To the President and Executive of
The Manitoba Medical Association:

The following are additions and amendments approved by the Committee on Constitution and By-laws:

I. The Fiscal Year

(a) Reference: Constitution, Article 14.
Delete Article 14 and substitute therefor: "The fiscal year of the Association shall begin the first day of September in each year."
(By way of explanation—(1) The year-end statement would be available for the October General meeting; (2) The budget for the forthcoming year would be available for the General meeting; (3) Financial matters arising out of the Annual Meeting could be implemented by the first of the year; (4) The auditors' services would be immediately available; (5) This would "spread" the year-end work and it would not conflict with the collection of fees.)

(b) Reference: By-laws, Chapter 1, Section VI.
Add: "Section VI — Annual Fee
The Annual fee as determined by the Executive of the Manitoba Medical Association is due on January first of each year."

(c) Reference: By-laws, Chapter 4, Section III (c) Finance of Sections
Paragraph 1, line 10, delete the word "November" and substitute therefore, "July".

(d) Reference: By-laws, Chapter 5, Section IV.
Paragraph 8, delete the first sentence and substitute therefor: "The Executive Committee, on the recommendation of the Honorary Treasurer, shall draw up a budget for the ensuing fiscal year."

II. Executive Committee

(a) Reference: Constitution, Article 10, Section I.
Add: "8. The Chairman of the Hospital Relations Committee."

(b) Reference: By-laws, Chapter 6, Section III.
Add: "(h) The Chairman of the Hospital Relations Committee shall be appointed at the first meeting of the new Executive of the Association."

(c) Reference: By-laws, Chapter 9, Section I.
Add to item (8) "The Chairman shall be a member of the Executive Committee with full voting powers."

(d) Reference: By-laws, Chapter 9, Section I.
Add to item (5) "The Chairman shall be a member of the Executive Committee with full voting powers." (By way of explanation — to make the terms of reference of each committee uniform.)

III. Representatives to Outside Bodies

(a) Reference: Constitution, Article 10, Section I.
Add to item 4 "or his alternate".

(b) Reference: Constitution, Article 10, Section IV.
Add to the first paragraph: "D 8 (a)".

(c) Reference: By-laws, Chapter 5, Section IV.
Add to paragraph 5: "D 8 (a)".

(d) Reference: By-laws, Chapter 6, Section III.
Add to item (d) "An alternate shall be appointed. (Note C.D.— D 8 (a)."

(e) Reference: By-laws, Chapter 9, Section III.
Add to item 3 "(Note C.D.—D 8 (b)".

(f) Reference: Considered Decisions, Section D.
Add: "D8 (a) The office of Representative to C.M.A. Executive Committee should ordinarily be held by a Past President of the M.M.A. and it is desirable that it be held by him for some years."
"D 8 (b) The alternate representative to C.M.A. Executive Committee should attend the meetings of the M.M.A. Executive Committee and once a year should attend a meeting of the C.M.A. Executive Committee at Divisional expense."

IV. Professional Policy Committee

(a) Reference: By-laws, Chapter 6, Section III.
Add to item (f), second line after "approved by," the words "a majority of."
(By way of explanation — it was felt that the majority acceptance of the committee chairman should be sufficient.)

(b) Reference: By-laws, Chapter 9, Section I (17).
Add to paragraph 3: "Representative of blocs attending the meeting to select specialists should vote for all members."
Paragraph 6, line 4, delete the word "mutually"; delete the word "all," and substitute therefor "a majority of the."

V. Standing Committees

(a) Reference: By-laws, Chapter 9, Section I.
On page 23, add "23. Committee on Child Health.
24. Committee on Nursing.
25. Medical Review Committee, M.H.S.P.

On page 29, add:
"(23) Committee on Child Health
This Committee shall study and report on pertinent matters relative to the health of infants and children from birth to adolescence and to the reduction of morbidity and mortality in this age group. The Committee may make recommendations for the improvement of facilities to this end and for the education of the profession in this field."
"(24) Committee on Nursing
This Committee shall study problems relating to the provision of adequate nursing services."
"(25) Medical Review Committee, M.H.S.P.
This Committee shall act as an advisory committee to the Manitoba Hospital Services Plan dealing particularly with claims policy."

VI. Special Committee

Reference: By-laws, Chapter 9, Section II.
Delete item (2) and substitute therefor:
"(2) Insurance Committee
This Committee shall study matters pertinent to the establishment and maintenance of sickness, accident, life and other insurance policies for the members of the Association and shall make recommendation on same to the Executive Committee."

VII. Representative from Faculty of Medicine to Executive Committee

The Committee reports that in its opinion a representative from the Faculty of Medicine should not be a voting member of the Executive Committee.
Respectfully submitted.

G. F. Hamilton,
Chairman.

Minutes of the Meeting of the Brandon and District Medical Society Clear Lake, June 28, 1961

Present were approximately 18 members of the society and guests, Dr. H. McNicol, president of the M.M.A., and the following visitors from the Dauphin and District Society: Dr. B. Symchych, Dr. M. Potoski, Dr. M. Brandt, and Dr. A. Dick; Dr. Reid of Selkirk. The President, Dr. D. McPhail.

1. The minutes of the previous meeting were read and adopted.

2. Dr. McDiarmid presented the McDiarmid Trophy to Dr. J. Rowlands, the winner of the golf tournament. In the ladies' division the prizes were presented to Mrs. Lidster, Mrs. Matheson and Mrs.

Povah. In the men's division the prizes were presented to Dr. F. Fjeldsted, Dr. Matheson and Dr. Shahariw.

3. Two minutes silence were observed in honor of the late Dr. G. Coghlin, the past president.

4. It was noted that representatives to the M.M.A. were to be elected from each of the North West and Brandon Districts for another year until the boundaries were settled.

5. Dr. Bowles asked that Brandon and District Society reconsider the problem of division of x-ray charges into professional and technical components. The problem was referred to the new executive.

6. Dr. V. Sharpe presented a report of the activities of the M.M.A. executive for the past year. This report was heard and accepted.

7. Dr. H. Bowles, as a member of the Hospital Relations Committee of the M.M.A., requested suggestions from the rural areas before any regulations regarding smaller hospitals were put into effect. Dr. R. O. Flett emphasized the necessity for the rural areas making representation to the committee re the proposed Hospital Regulations Act. It was moved by Dr. V. Sharpe and seconded by Dr. A. Povah that the question of regulatory by-laws for hospitals of 25 beds and less be referred to the new executive. The motion was carried.

8. It was moved by Dr. McDiarmid, and seconded by Dr. Matheson, that the president of the M.M.A. be requested to appoint three representatives from the rural areas to the committee re the proposed Hospital Regulations Act. The motion was carried.

9. The nominating committee introduced the following slate of officers of the Brandon and District Medical Society, for the year 1961-62.

President: Dr. James Scott, Brandon
Vice-Pres.: Dr. H. Stevenson, Minnedosa
Secretary: Dr. R. Myers, Brandon
Representative to M.M.A.:
Dr. V. Sharpe, Brandon
Executive Committee:
Dr. J. Murray Matheson, Brandon
Dr. J. McMillan, Oak River
Dr. G. Dow, Killarney.

It was moved by Dr. McDiarmid and seconded by Dr. Povah that nominations close. The above were elected.

10. The meeting adjourned at 12 noon on a motion by Dr. J. Murray Matheson.

R.P.H.S.

Nominating Committee Report
Manitoba Medical Association

Chapter 6, Section 1, of the By-laws of the Association states that the Nominating Committee shall consist of the President and the two most recent Past Presidents. This Committee shall be required to bring nominations before the General Meeting for the elective offices and elective nominees of the Association for the succeeding year. They shall present these nominations to the Executive Committee in such time that they may be considered and published in the official journal at least one month before the Annual Meeting or failing that possibility, mailed to the membership at least two weeks before the Annual Meeting. The Nominating Committee shall bring forward one or more names for each position.

The following nominations are submitted:

President:
Dr. K. R. Trueman, Winnipeg

First Vice-President:
Dr. K. I. Johnson, Pine Falls

Second Vice-President:
Dr. D. Parkinson, Winnipeg
Dr. L. R. Rabson, Winnipeg

Honorary Secretary:
Dr. F. W. DuVal, Winnipeg

Honorary Treasurer:
Dr. N. I. Corne, Winnipeg
Dr. D. L. Kippen, Winnipeg

Members-at-Large, Winnipeg:
(two to be elected)
Dr. R. E. Beamish, Winnipeg
Dr. A. C. McInnis, Winnipeg
Dr. A. L. Molgat, Winnipeg
Dr. W. S. Neal, Winnipeg

Members-at-Large, Rural:
(two to be elected)
Dr. J. F. Choate, Steinbach
Dr. D. M. McPhail, Boissevain
Dr. V. J. H. Sharpe, Brandon
Dr. C. M. Thomas, Portage la Prairie

M.M.S. Board of Trustees:
(three to be selected)
Dr. W. D. Bowman, Winnipeg
Dr. R. L. Cooke, Winnipeg
Dr. W. J. Elliott, Winnipeg
Dr. K. I. Johnson, Pine Falls
Dr. R. F. M. Myers, Brandon
Dr. G. J. Smith, Gladstone.

Social News

Reported by K. Borthwick-Leslie, M.D.

All good things come to an end — so back to the more important things in life, like gossip.

Congratulations to:

Dr. M. R. MacCharles, at the C.M.A. convention in Montreal, who was named president-elect of the association, which means lots of responsibility for the convention here next year.

☆

Drs. Ashley Thomson and Derek D. Gellman awarded a research grant from the Winnipeg Clinic Research Institute — to be used in research of kidney disease.

The General Practitioner Postgraduate award went to Dr. H. W. C. North, of Carman, Man.

☆

Dr. H. S. Atkinson, Supt. of the Manitoba School, Portage la Prairie, for thirty years, who received the "Golden Boy Award" for "exemplifying the way of life that makes Manitoba a better place for all."

☆

Dr. Amir Hasson Khazei, surgeon, recently returned from a stint of work at Gemena in the heart of the Congo under the Red Cross, World Health Organization.

☆

Dr. Harvey Chochinov, Deer Lodge Hospital, who has been awarded a one year travelling fellowship by the Nuffield Foundation in London, England.

☆

Col. Don Brereton, who won the Lt.-Governor's shooting match at the 79th M.P.R.A. meet at the St. Charles Ranges. Don appeared to thoroughly enjoy being "chaired" in traditional manner.

☆

Dr. Joan Gable (nee Hollenberg), daughter of Dr. and Mrs. Michael Hollenberg, who has been working on board the S.S. Hope, the world's first peace-time hospital ship.

Drs. Joan and John Gable, practice Ophthalmology in San Mateo, Cal. Her replacement on board ship, in June was her husband, Dr. John.

☆

Dr. Pieter de Jong, Chief Resident in Surgery, Kings County Hospital Centre, New York, also instructor in surgery at New York State University. In July, 1962, Dr. de Jong plans on returning to Winnipeg to practice with Dr. E. J. Bennett, Power Building.

Dr. and Mrs. John R. Dyck left recently for two years of work in the Leopoldville area of the Congo. Dr. Dyck, '59 graduate of M.M.C., Mrs. Dyck, a graduate of St. Boniface Hospital School of Nursing. Best wishes to them.

☆

Denis Eugene Bzowy, son of Dr. Joseph Bzowy, Dominion City has been awarded a $7200 scholarship, enrolling in the Case Institute of Technology, Cleveland, Ohio.

☆

Dr. John Scatliff, Fort Garry, director of Misericordia Hospital, and former president of the Winnipeg branch of the Royal Astronomical Society is developing a fascinating hobby—a do-it-yourself back yard space observatory.

☆

Mr. and Mrs. Mickey Brown, Seven Oaks, must have had an interesting family reunion. Dr. and Mrs. David Brown, '57, Rochester, Minn. having completed a tour of post-graduate neurosurgery at Mayo Clinic, met with brother Arthur — i.e. Dr. Arthur Brown, '56, and Mrs. Brown enroute to England where Dr. Arthur will do cardiac research work.

☆

Reuben Kaufman, M.D. announces the opening of his office, 410 Norlyn Medical Bldg., Hargrave St., specializing in Internal Medicine and Cardiology.

☆

Dr. Howard S. Jamieson left recently for London, England, visiting his uncle, Dr. Stuart Anderson, then to Nottingham for post-graduate study.

☆

Cupid has been on the rampage:

June 16th—Mildred Nelville and Dr. Donald Roy McLean, '60, were married in St. Andrews United Church.

☆

June 3rd — Marjorie Ann, daughter of Dr. and Mrs. Patrick H. McNulty, became the bride of Noel J. Pritchard.

☆

June 17th — Margaret Anne Lyons and Dr. William Gordon Carr, '60 were married in Harrow United Church. Dr. and Mrs. Carr will reside at 503 Lennox Bell House.

☆

June 30th—Charleswood United Church was the site of the wedding of Angela Joy Tait and Dr. Daniel Haldor Johnson, '56.

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EQUANIL subtly encourages acceptance of therapy in many patients suffering mild and moderate neuroses. By relaxing mind and muscle – without impairing mental and physical acuity – it helps you help patients toward new insights. Very often, EQUANIL permits patients to return to normal day-to-day activities while undergoing therapy.

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July 3rd — Dr. Fay Inman was married to Dr. John Dirks—both on the staff of Montreal General Hospital.

☆

July 8th — At Stephen, Minn., Carmel Gauthier, St. Boniface Hospital graduate, married Dr. Wilfred Tinsonneault, '59.

☆

In September Dr. Sidney Melko, '57, will marry Gwen Flackman, x-ray technician. Dr. Melko is in general practice in West Kildonan.

☆

Dr. and Mrs. N. D. McCreath announce the engagement of their daughter Robin Louise to Allen M. Lansdown. The wedding to be September 11th.

☆

Dr. and Mrs. L. P. Lansdown announce the engagement of their daughter Elizabeth Patricia Jean to Allen William Schneider. The wedding will be September 8th in Young United Church.

☆

Welcome to our new arrivals:

Dr. and Mrs. Fred Robbin, a daughter, Paula Rae, on July 24th.

Dr. and Mrs. Anthony Miller, June 23rd, a baby brother for Lynn.

☆

Dr. and Mrs. W. J. Blight, July 4th, a son, John Stephen.

☆

Dr. and Mrs. William G. Paterson, July 31st, a son, Alistair William, in Oxford, England.

☆

Dr. and Mrs. D. R. Cain, June 15th, a brother for Richard.

☆

Dr. and Mrs. Howard Jamieson, June 26th, a son, Anthony Case.

☆

Dr. and Mrs. S. K. Kemkaran, June 3rd, a baby brother for Heather and Jo-Anne.

☆

Dr. and Mrs. William B. McTavish, a son, William Alexander, brother for Jamie, Johnnie and Gordie.

☆

Dr. and Mrs. Kirk Osterland, July 10th, a son, Timothy, baby brother for Kathy. Dr. Osterland who is doing research work in New York spent his vacation at home in Fort Garry admiring his new son.

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Aluminum glycinate, basic*..... 7.7 gr. (0.5 G.)
Atropine sulphate..... 1/500 gr. (0.13 mg.)
Butabarbital NND..... ¼ gr. (16 mg.)

DOSAGE: *One tablet before each meal and one or two tablets at bedtime.*

Bottles of 100 tablets.

*Patented, 1951

- *non-absorbable*
- *no danger of alkalosis*
- *prompt relief of pain in uncomplicated peptic ulcer*
- *gastric contents buffered to a pH at which peptic activity is completely inhibited*

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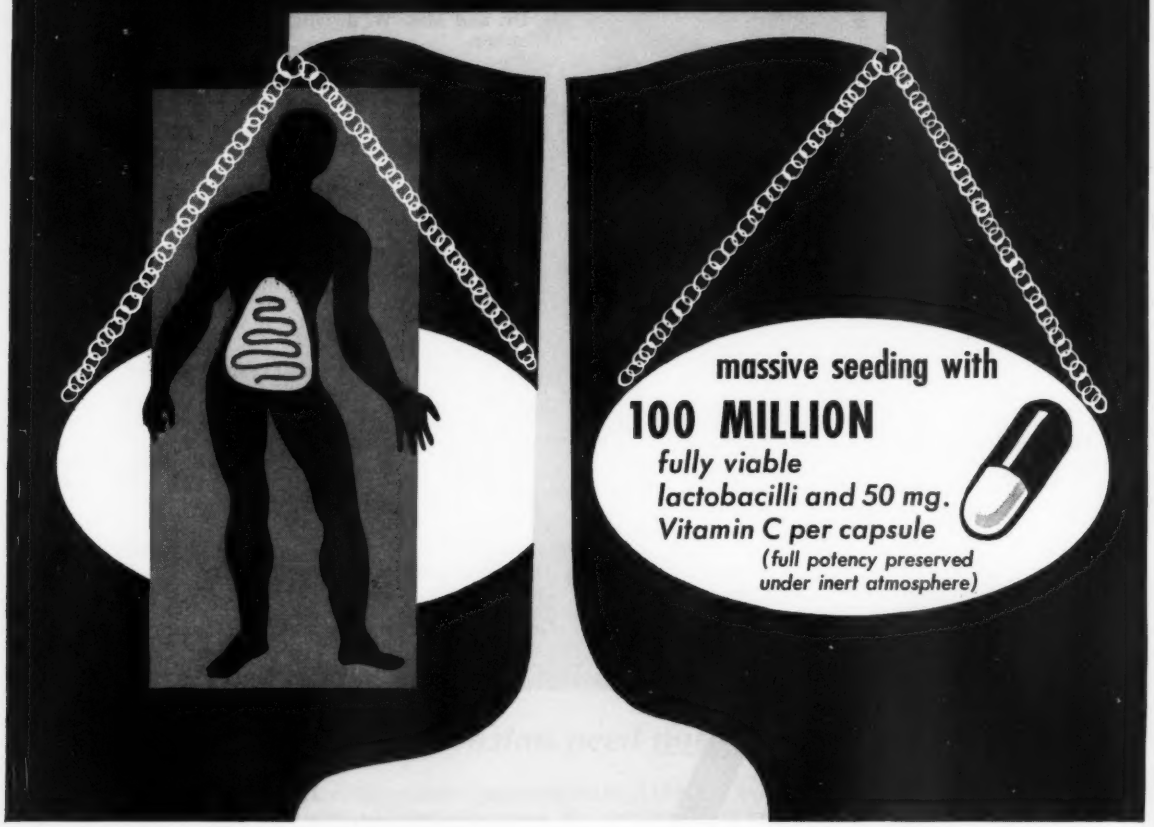
restores natural balance in intestinal diarrhoea



FERMALAC *is the ideal prophylaxis against antibiotic-induced diarrhoeas... their best corrective*

FERMALAC effects a massive seeding of the intestine with lactic bacteria which take root in the intestinal medium to effectively combat pathogenic bacteria.

FERMALAC WILL:

- stabilize and re-establish the lactic flora of the intestine
- combat cutaneous and digestive hazards—hypovitaminosis—various intestinal affections due to therapy with antibiotics
- restore Vitamin C to a Vitamin-depleted intestine.

FERMALAC'S SAFETY MAKES IT EXTREMELY WELL-SUITED FOR USE WITH CHILDREN. *Any indication for antibiotic therapy is an indication for FERMALAC.*

DOSAGE.
Children and adults—
1 to 2 capsules twice daily;
Infants—
1 to 2 capsules daily;
In very severe cases—
up to 10 capsules daily.

SUPPLY:
Bottles of 10 and 40 capsules.

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Questions and Answers Page

In order to keep the medical profession informed as fully as possible in all matters relating to Association business, medical economics and prepaid medical care, this page welcomes questions pertaining to these fields.

Question:

Can you give me a brief outline of the United Health Insurance Corporation Limited and the coverage available?

Answer:

The United Health Insurance Corporation Limited is a non-profit insurance organization and a subsidiary of the Manitoba Medical Service.

The U.H.I.C.L. offers coverage for private medical services and supplies, together with four riders for optional benefits. At the present time the program is being offered to employer groups of more than 25 employees.

The financing of U.H.I.C.L. cannot be subsidized by the medical profession. U.H.I.C.L. is a business concern coming under the direct jurisdiction of the Superintendent of Insurance of Manitoba, and will operate without special privileges in the health insurance field competing with established commercial carriers.

U.H.I.C.L. is supplemental to and only sold in conjunction with Manitoba Medical Service Plan HCX. A brief description of the medical and paramedical services is as follows:

1. Drugs and medicines which by law require a written prescription.

2. Private Duty Nursing in hospital.

3. Convalescent hospital (up to $5.00 per day), following discharge from active treatment hospital.

4. Visiting Registered Professional Nurse in the home following discharge from any hospital.

5. Professional ambulance service to the nearest hospital.

6. Dental treatment following accidental injury to natural teeth or jaw.

7. Physiotherapy by a qualified physiotherapist.

8. Anaesthetics and rental of equipment for their administration.

9. Blood transfusions, including the cost of blood or blood plasma.

10. Oxygen and rental of equipment for its administration.

11. Artificial limbs and eyes, casts, splints, trusses, braces and crutches.

12. Rental of wheel-chair, hospital-type bed or similar mechanical equipment.

The riders previously mentioned provide for hospital charges for semi-private accommodation, hospital charges for private accommodation, medical fees in Manitoba in excess of Manitoba Medical Service HCX Plan for employees whose total annual family income is more than $10,000.00 and in addition, elective care outside of Manitoba.

The way the plan works is briefly as follows: Each individual having this coverage must incur $50.00 covered expenses before any benefits are payable. In other words, there is $50.00 deductible. After the deductible has been satisfied, U.H.I.C.L will pay 80% of covered extended benefits which are in excess of the cash deductible. The remaining 20% of covered extended health benefits is payable by the contract holder.

Question:

Are doctors able to enroll in United Health Insurance Corporation Limited?

Answer:

At the present time the answer is "no" unless the doctor holds an HCX contract and is included in a group of 25 or more individuals.

In view of these underwriting restrictions for U.H.I.C.L. it has been suggested that the Manitoba Medical Association reconsider the formation of an M.M.S. doctors group in order that the profession may be eligible for the extended health benefits provided by the U.H.I.C.L.

Question:

What action has the Manitoba Medical Association taken to increase enrollment in its doctor-sponsored prepaid plan?

Answer:

Until quite recently underwriting rules in the Manitoba Medical Service did not permit non-group applicants a choice of contract. If age 65 or over—Plan H was available. Plan HC if under age 65 and Plan HCX if under age 55.

The Executive approved a recommendation from the Economics Committee that the Manitoba Medical Service non-group subscribers, regardless of age, have a choice of contract. The Manitoba Medical Service adopted this recommendation and changed their underwriting rules accordingly. Individuals who now qualify for non-group enrollment may select the type of contract they wish to purchase regardless of age.

At the Executive Committee meeting in July, the Economics Committee reported in connection with periodic health examinations and it was their feeling that adverse public relations has resulted in this item not being included in Manitoba Medical Service contracts.

The following resolution was proposed and carried:

"THAT M.M.A. recommends that annual health examinations for subscribers and dependents be covered by M.M.S.; such annual examination to include complete physical examination, full history, pelvic examination, proctoscopy, hemoglobin and urinalysis; such examination to be instituted

now on

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NEW CORONARY VASODILATOR FOR ANGINA PECTORIS

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acts within 15 to 30 minutes

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benefits last up to 5 hours

UNUSUAL SAFETY
transient headache only reported side effect

DOSAGE AND SUPPLY — Average dose is one tablet (10 mg.) taken one half hour before meals and at bedtime. Individualization of dosage may be necessary for optimum therapeutic effect; dosage may vary from 5 mg. to 20 mg. q.i.d. BOTTLES OF 100 AND 500.

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at the request of the subscriber or dependent, and not for a specific complaint."

The resolution has been directed to the M.M.S. for consideration.

It is understood that an annual health examination would only be available to an individual who has not received medical services requiring examination during the course of that year.

At the same Executive meeting, the Economics Committee presented their report in respect to increased enrollment privileges, and the following resolution was proposed and carried:

"THAT in view of the policy to extend enrollment, M.M.A. recommends that group enrollment be available to a minimum of five employees regardless of employer contribution, if M.M.S. considers it to be feasible and practical."

At the present time employer groups are only formed if the employer agrees to contribute to the cost of the basic Plan H.

This resolution has also been forwarded to M.M.S. for consideration.

Dr. Wendell MacLeod

Medical Colleges Establish Secretariat

Thirty-five of every hundred doctors now commencing practice in Canada are graduates of foreign medical schools, according to a statement today by Dr. G. H. Ettinger, Dean of the Medical College, Queen's University and President of the Association of Canadian Medical Colleges.

Dr. Ettinger cited the shortage as one reason for the Association's decision announced today, to establish a secretariat in Ottawa for its twelve member colleges. He announced that Dr. Wendell MacLeod, Dean of the Medical College, University of Saskatchewan will head the new Secretariat as Executive Secretary of the Association. Dr. MacLeod will take up his new appointment January 1st, 1962.

The Secretariat will explore the problem of the decline in acceptable applicants for medical training and will work to devise ways and means to improve the situation. Steps will be taken to stimulate interest in medical careers among high school students.

"One problem may be the length of training and the cost of a medical education," Dr. Ettinger stated. "Through the secretariat, the Association will be able to study ways to improve this situation." At present, a medical education must involve six years of post-high-school training, plus a possible additional five years of specialist training.

Another problem to be tackled by the Association is that of obtaining in-hospital training for medical students.

"Medical education depends on the use of hospitals for clinical instruction" Dr. Ettinger explained. Formerly, such training had been carried out in public wards. The growth of hospital insurance had diminished this source. "We must now look for an agreeable formula by which instruction can continue in hospitals and this will be one task of the secretariat."

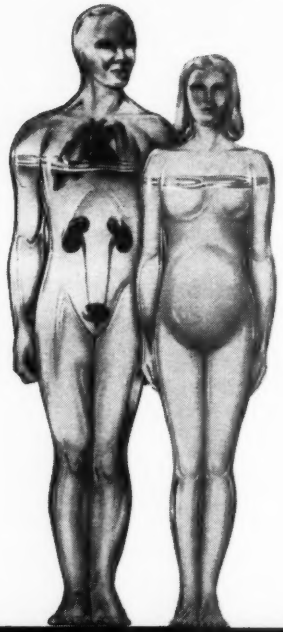
Curricula of medical schools will be studied with a view to standardizing training in all institutions.

Advice on the expansion of medical education facilities will be given by the secretariat to provincial Departments of Education and Health. The secretariat will also work to establish accreditation of Canadian medical schools by Canadian standards. Hitherto, accreditation has been carried out by visiting teams of the Association of American Medical Colleges, U.S. counterpart to the Canadian association.

It is expected that an unidentified U.S. foundation will assist financially in establishment of the secretariat.

Biography of Dr. Wendell MacLeod, B.Sc., M.D., F.R.C.P.S.(C)

Dr. MacLeod was born in Kingsbury, Que. in 1905, and received his early education in Martintown and Winchester, Ont. He attended McGill University as a student in Arts and Medicine and did post-graduate work at the Royal Victoria Hospital, Montreal and Washington University, St. Louis, Missouri.



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HydroDIURIL-Ka®, a convenient combination dosage form of HydroDIURIL® and potassium chloride, is a product specifically designed for long-term diuretic therapy. It gives most patients a measure of insurance against the development of hypokalemia without the necessity of separate supplementation with potassium and its attendant difficulties, e.g. nausea, vomiting and unreliable absorption.

HydroDIURIL-Ka Tablets are so constructed that HydroDIURIL is in the outer coating around an enteric-coated core of potassium. Thus HydroDIURIL is immediately available in the stomach, while the potassium chloride remains coated until it reaches the small intestine, thus avoiding gastric irritation

DOSAGE: One to 2 tablets, once or twice daily, as required.

SUPPLY: HydroDIURIL-Ka Tablets are supplied in bottles of 100. Each tablet contains 25 mg. of hydrochlorothiazide and 572 mg. of potassium chloride (equivalent to 300 mg. of potassium).

MSD

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Dr. MacLeod practiced medicine in Montreal until 1941, at which time he entered the Royal Canadian Navy. He served as consultant in medicine and as Principal Medical Officer at H.M.C.S. "Stadacona." During his service with the R.C.N. he was awarded the O.B.E. (Military Division). Dr. MacLeod returned to civilian life in 1945 and resumed his practice in Montreal.

Following this, he practiced medicine in Winnipeg, Man., and was lecturer in medicine at the University of Manitoba.

In 1951 - 52 he was awarded a Rockefeller Foundation fellowship to enable him to visit medical education centres in the U.S., the U.K. and Scandinavia, with a view to preparing him for his appointment as Dean of the College of Medicine, University of Saskatchewan. Dr. MacLeod took up this position in 1952, and has occupied it since. During his tenure, the College has expanded from a two-year to a full four-year medical course.

Dr. MacLeod is a member of the University Hospital Board, and is on the Board of Directors of the Centre for Community Studies, Saskatoon. He served on the Canadian Forces Medical Council from 1958 to 1961 and has been for eight years on the council of the Royal College of Physicians and Surgeons (Canada).

In 1957 he served as consultant to the Auckland, N.Z. Medical Research Foundation and to the Auckland Regional Hospital Board.

In 1958 he was faculty member on a study tour and seminar in Yugoslavia, conducted under the auspices of the World University Service of Canada. He has served as consultant to hospitals in connection with post graduate programmes and was involved in the organization of the College of General Practice in Canada.

Dr. MacLeod is married to the former Jessie McGeachy of Toronto. He has one son, Mr. Peter MacLeod, a student of medicine at McGill University, and one daughter, Mrs. John McDonald of Saskatoon.

☆

Urology Award

The American Urological Association offers an annual award of $1000 (first prize of $500, second prize $300, and third prize $200) for essays on the result of some clinical or laboratory research in Urology. Competition is limited to Urologists who have been graduated not more than ten years, and to hospital internes and residents doing clinical or laboratory research work in Urology. Animal research is not necessary.

"The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at The Bellevue-Stratford Hotel, Philadelphia, Pennsylvania, May 14-17, 1962."

"For full particulars write the Executive Secretary, William P. Didusch, 1120 North Charles St., Baltimore 1, Maryland. Essays must be in his hands before November 15, 1961."

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*MELLARIL a broad-spectrum tranquillizing agent virtually devoid of all side effects.

DOCUMENTATION ON MELLARIL
USE OF THIORIDAZINE (MELLARIL) IN A VARIETY OF CLINICAL SETTINGS[1]

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"Search for a broad-spectrum, innocuous tranquillizing agent with reliable potency has been continuous because of the latent hepatic danger of the earlier agents and the basal ganglion disturbances of the later compounds. A particularly promising compound, thioridazine hydrochloride, was first reported upon clinically in 1958 by Fleeson[2] and Cohen[3]. Further reports by Azima[4] and Sloane[5] have been made in Canada. Trials to date have shown a potency which compares well with that of chlorpromazine. There have been no reports of jaundice, and few of extrapyramidal disturbance . . . Expectations from previous reports were confirmed by the Drug Research Unit Study".

SUPPLIED: Mellaril tablets, 10 mg., 25 mg., 100 mg.

REFERENCES

†Clinical Director, Toronto Psychiatric Day Centre; Clinical Teacher (Psychiatry), University of Toronto.
‡Assistant Psychiatrist, St. Michael's Hospital; Associate Professor (Psychiatry), University of Toronto.
§Clinical Director, Ontario Hospital, Toronto; Assistant Professor (Psychiatry), University of Toronto.

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2. Fleeson, W., Glueck, B. and Herstad, G.: *Univ. Minnesota M. Bull.*, 29:274, (1958).
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*Reg'd. T.M.

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The Alexander Gibson Memorial Fund

The University of Manitoba has established a fund to honour the memory of the late Alexander Gibson, M.D. The purpose of the fund is to provide an annual lecture by an outstanding authority on surgery or research as a tribute to the great contribution which Dr. Gibson made to the teaching and practice of medicine during his lifetime.

The Inaugural lecture was given by Sir Walter Mercer, Emeritus Professor of Orthopedics at Edinburgh University, at the Manitoba Medical College in January, 1961.

Dr. Alexander Gibson was born in Scotland and received his medical education at Edinburgh University. He was a brilliant student, winning every honour and prize available to him, an unequalled record at Edinburgh.

In 1913, at the age of 32, Dr. Gibson came to Winnipeg to be Professor of Anatomy at the Medical College of the University. A year after his arrival, the first World War broke out, and he saw service in India and Egypt, including the torpedoing of his transport in the Adriatic.

In 1918, Dr. Gibson returned to Winnipeg and began his practice in orthopedic surgery, and he was actively engaged in this type of work to the moment of his death in 1956 at the age of 73.

Dr. Gibson's several original important contributions and his 77 publications earned for him a world-wide reputation in orthopedic surgery. Foremost amongst these was his development of a new operation upon the hip which brought relief to sufferers from arthritis.

During his lifetime he received many honours. For his research work in anatomy he was made Fellow of the Royal Society of Edinburgh; in 1920 he became a Fellow of the American College of Surgeons; later he was made Senior Member of the American Orthopedic Society. He served as President of the Canadian Orthopedic Association and of the Winnipeg Medical Society. He was a Life Member of the Winnipeg Medical Society and the Scientific Club of Winnipeg and Senior Member of the Canadian Medical Association.

His teaching and hospital appointments were: Professor of Anatomy, Lecturer in Applied Anatomy, Associate Professor of Surgery in charge of Orthopedic Surgery, Orthopedic Surgeon and Consultant to the Winnipeg General Hospital, and Director of Orthopedic Surgery at Deer Lodge Hospital.

In the Second World War he was in charge of a Canadian Red Cross Unit at Hairmyres, Lanarkshire, Scotland.

When The Royal College of Physicians and Surgeons of Canada met at Winnipeg in 1954, he delivered the Lecture in Surgery.

All members of the profession in Manitoba have been circularized, and it is hoped that contributions will be such as to allow this project to be carried out successfully.

Cheques are to be made out to the University of Manitoba, earmarked for the "Alexander Gibson Memorial Fund" and mailed to the Comptroller.

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SHE'S WEARING IT IN HER HAIR!
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ZENITH "ENVOY"
The Smartest Shape a Hearing Aid Can Take
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Post-Graduate Training in PSYCHIATRY

The Department of Psychiatry offers a comprehensive training program designed to qualify candidates for the Diploma in Psychiatry and for examinations of the Royal College of Physicians and Surgeons of Canada.

Prerequisites are graduation from an approved medical school and one year's rotating internship. Trainees may be given credit for previous post-graduate training.

The program consists of four years' supervised clinical experience in a number of hospitals and clinics, and correlated didactic courses.

Applications should be made to the Department of Psychiatry by October 1st. Successful applicants will commence their residency July 1st of succeeding year.

The remuneration provided varies with the training area. A limited number of Bursaries and Teaching Assistantships are available.

Additional information and application forms may be obtained by writing to:

THE DEPARTMENT OF PSYCHIATRY
UNIVERSITY OF MANITOBA
Room 110
Medical College Buildings
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Composition:

Dihydroergotamine-Sandoz	0.48 mg.
Scopolamine hydrochloride	0.24 mg.
Sodium barbital	135 mg. (2¼ gr.)
Sodium phenobarbital	45 mg. (¾ gr.)
Sodium Sandoptal	75 mg. (1¼ gr.)

Properties: The synergistic effect of this combination is so great that excellent sedation is obtained with minimum doses of the individual ingredients.

Plexonal Forte acts rapidly, evenly and without causing side-effects or after-effects. Can be used over a prolonged period of time without loss of effectiveness. Habituation has not been observed, and patients usually require smaller doses as they improve.

Indications: All conditions of C.N.S. stimulation, except severe paroxysmal conditions requiring parenteral treatment or psychotic conditions requiring Mellaril.

Average Dosage: 1 tablet before retiring.

Available: Plexonal Forte—bottles of 50, 250 and 1000 tablets. Plexonal Forte Suppositories—boxes of 6 and 30.

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Poulenc Limited
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H. V. Walker LE 3-8664

Searle & Co., G. D.
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A. M. Middleton JU 2-7946
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Warner-Chilcott Labs.
A. L. (Andy) Argue TU 8-1619
Gordon Harrower AL 3-4147

Winthrop Laboratories
R. M. Kelly Res. GR 5-6038
A. E. Pauwels CE 3-2024

Wyeth & Brother, John
A. W. Cumming HU 9-5694
Stuart Holmes JU 9-4273

DEPARTMENT OF HEALTH & PUBLIC WELFARE

NOTIFIABLE DISEASE PICTURE

North of 53 District

Reports were received of 5 cases of infectious hepatitis and 1 diarrhoea of the newborn.

Northwestern District

Three cases of infectious hepatitis.

Northern District

There were 2 cases of infectious hepatitis, 1 meningococcal infection and 1 diarrhoea of the newborn.

Brandon District

Twenty-three cases of infectious hepatitis; 3 cases of bacillary dysentery and 1 case of food poisoning were reported.

Central District

Five cases of infectious hepatitis and 1 case of diphtheria were reported. The diphtheria case occurred in a 36 year old woman in Portage la Prairie, who had not previously been immunized.

Winnipeg District

Reports were received on 35 cases of infectious hepatitis, 5 cases of brucellosis, 8 bacillary dysentery, 1 food poisoning, 1 meningococcal infection, 1 meningitis due to unspecified causes, 4 scarlet fever, 1 whooping cough, and 1 case of diphtheria. The diphtheria was a 5 year old boy who had been immunized in 1958 and had received a booster dose in 1960.

Southern District

There were 2 cases of infectious hepatitis and 1 brucellosis.

LIST OF DEATHS FROM COMMUNICABLE DISEASES
June, 1961

URBAN: Cancer, 102; Diarrhoea & Enteritis, 5; Influenza, 2; Pneumonia, Lobar (490), 7; Pneumonias (other forms), 27; Septicaemia & Pyaemia, 2; Syphilis, 1; Tuberculosis, 2; Herpes zoster, 1. Other deaths under 1 year, 39. Other deaths over 1 year, 443. Stillbirths, 31. Total, 662.

RURAL: Cancer, 29; Diarrhoea & Enteritis, 4; Influenza, 1; Pneumonia, Lobar (490), 1; Pneumonias (other forms), 6; Tuberculosis, 2. Other deaths under 1 year, 12. Other deaths over 1 year, 186. Stillbirths, 11. Total, 252.

INDIANS: Diarrhoea & Enteritis, 1. Others deaths under 1 year, 1. Other deaths over 1 year, 3. Stillbirths, 1. Total, 6.

Unorganized Miscellaneous

There were nine cases of infectious hepatitis and one bacillary dysentery.

General

The general incidence of communicable diseases reported remains low. Infectious hepatitis with 85 cases in the province was by far the most prevalent communicable disease. It is noteworthy that cases of diphtheria continue to be reported sporadically and during the month two cases were reported. This brings the total in the province to date for 1961 up to five.

Dr. Emilien Labelle

Medical Director of Nadeau Laboratory Ltd.

Dr. Emilien Labelle has recently joined the Nadeau Laboratory as Medical Director. He was previously Chief of the Department of cardio-pulmonary physiology and Vice-President of the Medical Board at Sainte-Justine's Hospital, Montreal.

He obtained a B.A. cum laude in 1942; in 1943, a Certificate of advanced studies in physics, chemistry and biology from the Faculty of Sciences of the University of Montreal and in 1948, his Doctorate of Medicine, magna cum laude, from the same University.

After a short period of general practice he undertook postgraduate studies in cardio-respiratory physiology and scholarships from both the Federal and Provincial Governments, first at the Lavoisier Institute and Saint-Joseph's Hospital, Rosemount, and later in the U.S., at the Trudeau Foundation and at the Mayo Clinic. Returning to Montreal in 1955, he founded and became the first director of the service of cardiopulmonary physiology at Sainte-Justine's Hospital, a post which he retained until recently.

His interest in research has caused him to undertake some fifteen projects, the results of which have been published in various scientific reviews during the last five years. He has also produced two medical films which have been highly rated. One of these won him the Award for 1960 of the Medical Society of Montreal.

Dr. Labelle is Fellow of the American College of Chest Physicians, Fellow of the American College of Cardiology, Fellow of the American Geriatrics Society, member of the Quebec Clinical Research Club, member of the Society of Phtisiology and Pneumatology of Montreal and several other scientific associations.

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